

EXHIBIT 6

**UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF TEXAS
SHERMAN DIVISION**

WAPP TECH LIMITED PARTNERSHIP and
WAPP TECH CORP.,

Plaintiffs,

v.

BANK OF AMERICA, N.A.,
Defendant.

Civil Action No. 4:21-cv-00670

JURY TRIAL DEMANDED

BANK OF AMERICA, N.A.'S INVALIDITY CONTENTIONS
PURSUANT TO PATENT LOCAL RULES 3-3 AND 3-4

I. INTRODUCTION

Pursuant to the Court’s Patent Scheduling Order entered January 13, 2022 (D.I. 37) and Patent Local Rules 3-3 and 3-4, Defendant Bank of America, N.A. (“Bank of America”) provides these preliminary invalidity contentions (“Invalidity Contentions”) to Plaintiffs Wapp Tech Limited Partnership and Wapp Tech Corp. (collectively, “Wapp”) for the following patents (collectively, “Asserted Patents”) and claims (collectively, “Asserted Claims”) identified as asserted in Wapp’s P.R. 3-1 and 3-2 Disclosures (“Infringement Contentions”) served on January 18, 2022:

- U.S. Patent No. 8,924,192 (the “’192 Patent”) — Claims 1, 2
- U.S. Patent No. 9,298,864 (the “’864 Patent”) — Claim 1
- U.S. Patent No. 9,971,678 (the “’678 Patent”) — Claim 45
- U.S. Patent No. 10,353,811 (the “’811 Patent”) — Claims 1–2, 4–5, 8–9, 22, and 24
- U.S. Patent No. 10,691,579 (the “’579 Patent”) — Claims 1–7, 11, 13–19, and 25–29

Bank of America addresses the invalidity of the Asserted Claims in these Invalidity Contentions, and concludes with a description of its document production and identification of additional reservations and explanations.

II. GENERAL RESERVATIONS

These invalidity contentions are preliminary. Consistent with Patent Rule 3-6, Bank of America reserves the right to revise or supplement these contentions in light of party and third-party discovery (such as prior art products or systems from third-parties), Wapp’s infringement contentions, any claim construction order issued by the Court, review and analysis by expert witnesses, and further investigation and discovery regarding the defenses asserted by Bank of America. For example, Bank of America expressly reserves the right to amend these contentions

after review of Wapp's infringement contentions, after issuance of the claim construction order, should Wapp provide any information that it failed to provide in its disclosures, or if Wapp amends its disclosures in any way. Further, because discovery is ongoing, Bank of America reserves the right to revise, amend, and/or supplement the information provided herein, including identifying, charting, and relying on additional references upon written notice for good cause shown. Further, Bank of America reserves the rights to revise, amend, or supplement when Wapp provides additional discovery. Further, Bank of America reserves the right to revise its preliminary contentions concerning the invalidity of the asserted claims, which may change depending upon further and ongoing investigation, the construction of the asserted claims and/or positions that Wapp or expert witnesses may take concerning claim construction, infringement, and/or invalidity issues.

Bank of America hereby incorporates by reference all invalidity-related materials produced by Bank of America, Wapp, Micro Focus LLC and any other party from prior litigations involving the Asserted Patents, including all expert declarations and reports, expert testimony, invalidity contentions, invalidity related discovery responses, and prior art. Wapp has not, to date, produced all invalidity-related materials in its possession, custody, or control despite requests to do so. Bank of America reserves the right to rely on, and hereby incorporates by reference, any invalidity-related material later produced by Wapp from any prior litigation, including, but not limited to, any expert declaration or report on invalidity, any expert testimony at deposition, trial, or other hearing, any invalidity contentions, any invalidity related discovery responses, and any prior art documents.

Prior art not included in this disclosure, whether known or not known to Wapp, may become relevant. In particular, Bank of America is currently unaware of the extent, if any, to

which Wapp will contend that limitations of the asserted claims are not disclosed in the prior art identified by Bank of America. To the extent that such an issue arises, Bank of America reserves the right to chart and/or identify other references that would anticipate and/or render obvious the allegedly missing limitations of the claims. Bank of America reserves the right to rely on any reference found in the prosecution histories of the applications leading to the Asserted Patents or otherwise identified in connection with this action, including any reference disclosed along with its preliminary infringement contentions.

To the extent that the following contentions reflect constructions of claim limitations consistent with or implicit in Wapp's allegations or proposed claim constructions, no inference is intended nor should any be drawn that Bank of America agrees with Wapp's allegations or claim constructions, and Bank of America expressly reserves the right to contest such allegations and claim constructions. Bank of America offers such contentions in response to Wapp's infringement allegations and apparent interpretation of claim terms as reflected in Wapp's contentions, and without prejudice to any position that Bank of America may ultimately take as to any claim construction issues. Specifically, Bank of America bases these invalidity contentions at least in part upon the claim scope and certain claim constructions that are implicitly or explicitly asserted by Wapp, and nothing herein should be construed or represented as evidencing any express or implied agreement with any of Wapp's claim construction or positions.

Bank of America's claim charts cite to particular teachings and disclosures of the prior art as applied to features of the asserted claims. However, persons having ordinary skill in the art generally may view an item of prior art in the context of other publications, literature, products, and understanding. As such, the cited portions are only examples, and Bank of America reserves the right to rely on uncited portions of the prior art references and on other publications, expert

testimony, and other evidence as aids in understanding and interpreting the cited portions, as providing context thereto, and as additional evidence that the prior art discloses a claim limitation or any of the asserted claims as a whole. Bank of America further reserves the right to rely on uncited portions of the prior art references, other publications, and testimony, including expert testimony, to establish bases for combinations of certain cited references that render the asserted claims obvious.

The references discussed in the claim charts may disclose the elements of the asserted claims explicitly and/or inherently, and/or they may be relied upon to show the state of the art in the relevant timeframe. The suggested obviousness combinations are provided in addition to and/or in the alternative to Bank of America's anticipation contentions and are not to be construed to suggest that any reference included in the combinations is not by itself anticipatory.

The following discussion and exhibits provide exemplary prior art citations and obviousness positions. The citations and discussion in the charts are organized by claim (and claim limitation) for convenience, but each limitation or claim section applies to the larger context of each claim, to any related dependent or independent claims, as well as all claims containing similar limitations or elements. For example, citations as to any recited limitation, step, or component in the claims apply wherever each such limitation, step, or component is repeated elsewhere in the claim or patent. Where Bank of America cites to a particular drawing or figure in the attached claim charts, the citation encompasses the description of the drawing or figure, as well as any text associated with the drawing or figure. Similarly, where Bank of America cites to particular text concerning a drawing or figure, the citation encompasses that drawing or figure as well. Relatedly, certain portions of patent or other prior art disclosures build upon other disclosures, even if they are referred to as a separate or alternative embodiment. Thus, Bank of America's citations to

structures or functions incorporate by references all disclosures to related structures or functions, including any additional detail provided as to the operation or design of those structures or functions.

Discovery of the inventors is ongoing. Bank of America reserves the right to assert that the asserted claims are invalid under 35 U.S.C. § 102(f) in the event Bank of America obtains additional evidence that the inventors of the Asserted Patents did not invent the subject matter claimed therein. Should Bank of America obtain such evidence, Bank of America will provide the name of the person(s) from whom and the circumstances under which the alleged invention or any part of it was derived.

Bank of America also reserves its rights to challenge any of the claim terms herein under 35 U.S.C. § 112 beyond the grounds outlined in its responses to interrogatories related to invalidity, including on the basis that they are indefinite, not supported by the written description, and/or not enabled. Nothing stated herein shall be construed as a waiver of any argument available under 35 U.S.C. §§ 101, 102, 103, and/or 112.

Bank of America also reserves the right to challenge each of the Asserted Patents under the doctrine of obviousness-type double patenting, based on any of the other Asserted Patents or any related patents which may not be currently asserted.

III. INVALIDITY CONTENTIONS

A. Priority Date

Wapp has failed to comply with P.R. 3-1, which requires Wapp to identify “the priority date to which each asserted claim allegedly is entitled.” For each Asserted Patent, Wapp alleges a claim of priority to “at least” a multitude of enumerated applications without specifying the priority date to which each asserted claim allegedly is entitled. Wapp’s January 24, 2022 Responses to Bank of America’s Interrogatory No. 7 regarding priority dates are similarly

deficient. Bank of America reserves the right to supplement and/or amend its invalidity contentions should Wapp be later permitted to disclose the information required by P.R. 3-1.

Accordingly, Wapp has failed to show that any claim is entitled to a priority date prior to its own filing date, and thus the prior art identified below for each patent invalidates the asserted claims of that patent as explained below and in any attached charts.

B. '192 Patent

1. Prior Art

Bank of America identifies the following prior art now known to Bank of America to anticipate and/or render obvious one or more asserted claims of the '192 patent under at least 35 U.S.C. §§ 102(a), (b), (e), (g), 103, and/or 119.¹

a. Prior Art Patents and Publications

The following patents and publications are prior art for the Asserted Claims of the '192 patent under at least 35 U.S.C. §§ 102(a), (b), (e), and/or (g), either expressly or inherently as understood by a person of ordinary skill in the art ("POSA"), or based on Wapp's apparent interpretation of the claims. Where an identified patent or publication describes a product, Bank of America intends to rely on the product described in such patent or publication as well as the patents and/or publication themselves.

- "The Mobeware Toolkit: Programmable Support for Adaptive Mobile Networking" by Oguz Angin et al. ("Angin"), published in August 1998, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. A01.
- "UBIWISE, A Simulator for Ubiquitous Computing Systems Design" by Barton et al. ("Barton"), published on April 29, 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. A02.

¹ Citations to sections of 35 U.S.C. throughout these contentions refer to Pre-AIA versions of U.S. Code Chapter 35. Each of the Asserted Patents claims priority to applications filed before March 16, 2013, and therefore subject to the Pre-AIA U.S. Code Chapter 35.

- U.S. Patent Application Publication No. US 2003/0156549 A1 to Binder et al. (“Binder”), filed on January 9, 2003, published on August 21, 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a), (b), and (e). *See* Ex. A03.
- BlackBerry Simulator Version 3.6 User Guide (DEF000333) (“Simulator User Guide”), published on April 10, 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. A04.
- BlackBerry Java Development Environment version 3.6 Developer Guide (DEF000084) (“Dev. Environment Dev. Guide”), published on March 21, 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. A04.
- U.S. Patent Application Publication No. US 2006/0282247 A1 to Brennan et al. (“Brennan”), filed on May 25, 2005, published on December 14, 2006, and qualifies as prior art at least under 35 U.S.C. § 102(e). *See* Ex. A05.
- U.S. Patent No. 7,877,247 to Nahata et al. (“Nahata”), filed on January 25, 2011, published on June 9, 2005, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (e). *See* Ex. A06.
- BREW 1.0 API – API Reference, https://developer.brewmp.com/reference/api-all/brew_mp_1.0.2. *See* Ex. A06.
- “Software Development for the Qualcomm BREW Platform” by Ray Rischpater (“Qualcomm Brew”), published in 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. A06.
- *Mobile Internet—An industry-wide paradigm shift?* (DEF004377) (“Andersson 1999”), published in 1999, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. A07.
- *An Experience in Evaluating Publish/Subscribe Services in a Wireless Network* (DEF007158) (“Caporuscio 2002”), published July 24–26, 2002, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. A07.
- *GPRS and 3G Wireless Applications* (DEF004329) (“Andersson 2001”), published in 2001, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. A07.
- GATE II / MATE Overview (DEF004385), on information and belief published prior to June 10, 2005, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. A07.
- MATE User Manual (DEF004419), published in 2001, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. A07.
- “J2ME in a Nutshell,” published in March 2002, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. A08.
- “J2ME Game Programming,” published in 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. A08.
- J2ME User Guide (v2.1), published in December 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. A08.
- J2ME User Guide (v.2.2), published in October 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. A08.
- U.S. Patent Application Publication No. 2004/0040010 to Kounik et al. (“Kounik”), filed on April 22, 2003, published on February 26, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a), (b), and (e). *See* Ex. A09.

- US Patent No. 2006/0277231 A1 to Kral et al. (“Kral”), filed on July 29, 2005, published on December 8, 2006, and qualifies as prior art at least under 35 U.S.C. § 102(e). *See* Ex. A10.
- Macromedia Delivers Flash Lite 1.1 (“Macromedia Press Release”), published June 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. A11.
- Macromedia - Flash 8 – Developing Flash Lite 2.x Applications (“Manual for Developing Flash Lite 2.x Applications”), published in January 2006, and qualifies as prior art at least under 35 U.S.C. § 102(a). *See* Ex. A11.
- “Palm OS Emulator,” published on April 1, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. A12.
- Palm OS Programmer’s Companion (Preliminary), published in 1999, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. A12.
- Palm OS Programming Bible by Lonnon R. Foster (“Foster”), published in 2000, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. A12.
- Palm OS Web Application Developer’s Guide by Ben Combee et al. (“Combee”), published in 2001, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. A12.
- Palm OS 5 ARM Programming – Palm OS 5 SDK (68K) R3 by Brian Maas et al. (“Maas”), published on July 30, 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. A12.
- Palm OS Programming – The Developer’s Guide by Neil Rhodes et al. (“Rhodes”), published in January 2002, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. A12.
- “A Trace-Driven Simulator for Palm OS Devices” by Hyrum D. Carroll (“Carroll”), published in September 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. A12.
- “Energy Estimation Tools for the Palm,” MSWiM, 2000, pp. 96–103 by Cignetti et al. (“Cignetti”), published on August 11, 2000, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. A12.
- Using Palm OS Emulator by Brian Maas (“Maas2”), published in March 2002, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. A12.
- Virtual Phone User’s Guide – Palm OS 5 SDK (68K) R3 by Brian Maas et al. (“Maas3”), published on July 30, 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. A12.
- Pocket PC 2002 SDK Emulator Images (“Pocket PC 2002”), published on February 13, 2002, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. A13.
- Pocket PC 2003 Second Edition Emulator Images (“Pocket PC 2003”), published on March 24, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. A13.
- TechRepublic, *Introduction to Pocket PC Development*, published on October 26, 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. A13.

- Girish Nurani Sankaranarayanan, CodeProject, *Get up and running with Windows CE* (Get Up and Running with Windows CE), published on July 22, 2002, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. A13.
- Microchip Technology Inc., *Programming the Pocket PC OS for Embedded IR Applications* (2004) (“Programming the Pocket PC”), published in 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. A13.
- Paul Yao & David Durant, .NET Compact Framework Programming with C# (“.NET Compact Framework Programming”), published on May 24, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. A13.
- AT&T Wireless, *devCentral White Paper: Developing Applications for Pocket PC and GPRS/EDGE* (“Developing Applications for Pocket PC”), published on October 15, 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. A13.
- Dennis Drogseth, Delivering WAN-ready applications with Shunra (“Drogseth”), published on October 11, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. A14.
- Business Wire, Network Computing Magazine Tests with Shunra Software’s Pre-emptive Infrastructure Performance Management Solutions (“Network Computing Magazine”), published on April 28, 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. A14.
- Shunra\Storm Solution Suite: The Complete Enterprise Performance Lab (“Shunra\Storm Solution Suite”), published on February 20, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. A14.
- How Shunra\Storm Works (“How Shunra\Storm Works”), published on April 28, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. A14.
- Testing Report: SHUNRA\STORM STX-100 (“Testing Report”), published in October 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. A14.
- SHUNRA\STORM – 3.0 Solution Suite – Bringing the Complete Enterprise Environment into Your Lab (“3.0 Solution Suite”), published in 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. A14.
- The Shunra Virtual Enterprise Architecture and Specifications (“Architecture and Specifications”), published on April 3, 2005, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. A14.
- Network World, Shunra Updates Network Simulation, Profiling Tool (“Shunra Updates”), published on February 6, 2006, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. A14.
- Shunra Virtual Enterprise 4.0 – Deliver It With Confidence (“Shunra Virtual Enterprise”), published on March 16, 2006, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. A14.
- InfoWorld, Shunra Releases an Enterprise Testing Storm (“InfoWorld”), published on March 26, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. A14.
- ADT Magazine, Product Briefs (“Product Briefs”), published on June 1, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. A14.

- Hotwire.com Selects Shunra Software to Proactively Ensure the Performance of its eCommerce Applications over the Internet (“Hotwire Selects Shunra”), published on November 8, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. A14.
- U.S. Patent No. 7,647,399 to Ofel (“Ofel”), filed on December 6, 2005, published on June 7, 2007, and qualifies as prior art at least under 35 U.S.C. § 102(a), (b), and (e). *See* Ex. A14.
- U.S. Patent No. 7,673,042 to Lesser (“Lesser”), filed on December 6, 2005, published on June 7, 2007, and qualifies as prior art at least under 35 U.S.C. § 102(a), (b), and (e). *See* Ex. A14.
- U.S. Patent No. 7,877,230 to Ofel, Jacobson, and Horowitz (“Ofel/Jacobson”). *See* Ex. A14.
- WIPO International Application Publication No. WO 99/63439 (“Daon”), published on June 4, 1998, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. A14.
- The Shunra Virtual Network (Desktop Edition) (“Virtual Network (Desktop Edition)”), published on March 31, 2005, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. A14.
- Shunra Stratus 2.0 Shortens Development Cycle (“Shunra Stratus 2.0”), published on May 7, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. A14.
- Shunra\Stratus 2.0 for Development Testing of Distributed Applications (“Shunra\Stratus 2.0 for Development Testing”), published on June 9, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. A14.
- Shunra\Stratus: Performance Debugger for Distributed Applications (“Shunra\Stratus: Performance Debugger”), published on April 5, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. A14.
- Shunra\Cloud: Network Emulator for the Small Business Performance Lab (“Shunra\Cloud: Network Emulator”), published on June 3, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. A14.
- Shunra\Cloud – Emulation Module (“Shunra\Cloud – Emulation Module”), published on August 15, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. A14.
- Mercury LoadRunner (“Mercury LoadRunner”), published on May 29, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. A14.
- Mercury LoadRunner – How it Works (“Mercury LoadRunner - How it Works”), published on June 15, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. A14.
- Mercury LoadRunner – Features and Benefits (“Mercury LoadRunner - Features and Benefits”), published on May 29, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. A14.
- The Shunra Virtual Network: Assess IT Services Over a Network Link Small Business Edition (Shunra\Cloud) (“Virtual Network”), published on March 7, 2005, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. A14.

- U.S. Patent Application Publication No. 2005/0047556 to Somerville et al. (“Somerville”), filed on August 25, 2003, published on March 3, 2005, and qualifies as prior art at least under 35 U.S.C. § 102(a), (b), and (e). *See* Ex. A15.
- U.S. Patent Application Publication No. US 2006/0009159 to Leung (“Leung”), filed on July 9, 2004, published on January 12, 2006, and qualifies as prior art at least under 35 U.S.C. § 102 (a), (b), and (e). *See* Ex. A16.
- U.S. Patent Application Publication No. 2005/0090243 to El Hussein et al. (“El Hussein”), filed on October 23, 2003, published on April 28, 2005, and qualifies as prior art at least under 35 U.S.C. § 102(a), (b), and (e). *See* Ex. A17.
- U.S. Patent Application Publication No. 2006/0140125 to Ottinger et al. (“Ottinger”), filed on December 23, 2004, published on June 29, 2006, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (e). *See* Ex. A18.
- UK Patent No. GB 2,398,456 A to Windred (“Windred”), published on August 18, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. A19.
- U.S. Patent Application Publication No. 2005/0090239 to Lee et al. (“Lee”), filed on October 22, 2003, published on April 28, 2005, and qualifies as prior art at least under 35 U.S.C. § 102(a), (b), and (e).
- U.S. Patent Application Publication No. 2003/0045298 to Linton et al. (“Linton”), filed on March 30, 2001, published on March 6, 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a), (b), and (e).
- “WISE – A Simulator Toolkit for Ubiquitous Computing Scenarios” by V. Vijayraghavan et al. (“Vijayraghavan”), published on October 22, 2002, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b).
- U.S. Patent No. 7,155,381 to Ryzl (“Ryzl”), filed on March 12, 2001, published on November 14, 2002, and qualifies as prior art at least under 35 U.S.C. § 102(a), (b), and (e).
- U.S. Patent No. 6,898,602 to Sayag (“Sayag”), filed on April 22, 2002, published on October 23, 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a), (b), and (e).
- WIPO Patent Application Pub. No. WO 2004/031951 A2 (“Poortman”) was published on April 15, 2004. It qualifies as prior art at least under 35 U.S.C. § 102 (a) and (b).
- U.S. Patent No. 6,311,324 (“Smith”) issued on October 30, 2001 and was filed on June 7, 1995. It qualifies as prior art at least under 35 U.S.C. § 102 (a), (b), and (e).

Bank of America’s investigation into prior art patent and publication references remains ongoing and Bank of America reserves the right to identify and rely on additional patent or publication references that describe or are otherwise related to the prior art systems identified below based on information obtained through discovery.

b. Prior Art Systems

The following systems are anticipatory prior art for the Asserted Claims of the '192 patent under at least 35 U.S.C. §§ 102(a), (b) and/or (g):

- Products, components, systems, and methods invented, designed, developed, reduced to practice, and/or in public use or on sale related to BlackBerry Development Environment, as exemplified in claim charts in Exhibit A04. As part of these Invalidity Contentions, Bank of America has produced documents relating to the BlackBerry Development Environment. Based on information available to Bank of America, Bank of America believes that the BlackBerry Development Environment was conceived and/or reduced to practice by engineers at BlackBerry Limited at least before 2003, without being abandoned, suppressed, or concealed, and was in public use or on sale on or before 2003.
- Products, components, systems, and methods invented, designed, developed, reduced to practice, and/or in public use or on sale related to Qualcomm Binary Runtime Environment for Wireless Platform ("BREW"), as exemplified in claim charts in Exhibit A06. As part of these Invalidity Contentions, Bank of America has produced documents relating to the Qualcomm BREW. Based on information available to Bank of America, Bank of America believes that the Qualcomm BREW was conceived and/or reduced to practice by engineers at Qualcomm Incorporated at least before 2004, without being abandoned, suppressed, or concealed, and was in public use or on sale on or before 2004.
- Products, components, systems, and methods invented, designed, developed, reduced to practice, and/or in public use or on sale related to Ericsson's Global Application Test Environment II / Mobile Application Test Environment ("GATE II / MATE"), as exemplified in claim charts in Exhibit A07. As part of these Invalidity Contentions, Bank of America has produced documents relating to the GATE II / MATE. Based on information available to Bank of America, Bank of America believes that the GATE II / MATE was conceived and/or reduced to practice by engineers at Telefonaktiebolaget LM Ericsson at least before 2002, without being abandoned, suppressed, or concealed, and was in public use or on sale on or before 2002.
- Products, components, systems, and methods invented, designed, developed, reduced to practice, and/or in public use or on sale related to J2ME, as exemplified in claim charts in Exhibit A08. As part of these Invalidity Contentions, Bank of America has produced documents relating to the J2ME. Based on information available to Bank of America, Bank of America believes that the J2ME was conceived and/or reduced to practice by engineers at Sun Microsystems, Inc. at least before 2004, without being abandoned, suppressed, or concealed, and was in public use or on sale on or before 2004.
- Products, components, systems, and methods invented, designed, developed,

reduced to practice, and/or in public use or on sale related to Macromedia Flash Lite, as exemplified in claim charts in Exhibit A11. As part of these Invalidity Contentions, Bank of America has produced documents relating to the Macromedia Flash Lite. Based on information available to Bank of America, Bank of America believes that the Macromedia Flash Lite was conceived and/or reduced to practice by engineers at Macromedia Inc., later acquired by Adobe, at least before 2004, without being abandoned, suppressed, or concealed, and was in public use or on sale on or before 2004.

- Products, components, systems, and methods invented, designed, developed, reduced to practice, and/or in public use or on sale related to Palm OS Emulator, as exemplified in claim charts in Exhibit A12. As part of these Invalidity Contentions, Bank of America has produced documents relating to the Palm OS Emulator. Based on information available to Bank of America, Bank of America believes that the Palm OS Emulator was conceived and/or reduced to practice by engineers at Palm Inc. at least before 2004, without being abandoned, suppressed, or concealed, and was in public use or on sale on or before 2004.
- Products, components, systems, and methods invented, designed, developed, reduced to practice, and/or in public use or on sale related to Pocket PC Emulator, as exemplified in claim charts in Exhibit A13. As part of these Invalidity Contentions, Bank of America has produced documents relating to the Pocket PC Emulator. Based on information available to Bank of America, Bank of America believes that the Pocket PC Emulator was conceived and/or reduced to practice by engineers at Microsoft Corporation at least before 2005, without being abandoned, suppressed, or concealed, and was in public use or on sale on or before 2005.
- Products, components, systems, and methods invented, designed, developed, reduced to practice, and/or in public use or on sale related to the Shunra system, as exemplified in claim charts in Exhibit A14. As part of these Invalidity Contentions, Bank of America has produced documents relating to the Shunra system. Based on information available to Bank of America, Bank of America believes that the Shunra system was conceived and/or reduced to practice by engineers at Shunra Software Ltd. at least before 2004, without being abandoned, suppressed, or concealed, and was in public use or on sale on or before 2004.

Bank of America's investigation into prior art systems remains ongoing and Bank of America reserves the right to identify and rely on systems that represent different versions or are otherwise related variations of the systems identified above. Bank of America further reserves the right to revise, amend, update, and/or supplement the information provided in these Invalidity Contention (including the attached claim charts) based on additional information and evidence obtained through discovery. Bank of America also reserves the right to rely on any system,

product, or public knowledge or use that embodies or otherwise incorporates any of the prior art patents and publications listed above. In addition to the prior art products, components, systems, and methods described above, Bank of America also reserves the right to rely on documents and publications relating to the prior art listed above as prior art publications.

2. Anticipation and Obviousness

Bank of America contends that each item of prior art in Exhibits A1 to A19 anticipates the asserted claims of the '192 Patent. In the alternative, each item of prior art in Exhibits A1 to A19, when combined with the knowledge of a POSA and/or the applicant admitted prior art, renders obvious each asserted claim of the '192 Patent.

To the extent any limitation is not explicitly or inherently disclosed by an item of prior art listed in Exhibits A1 to A19, the claimed subject matter as a whole would have been obvious to one skilled in the art at the time of the alleged invention, in view of the state of the art and knowledge of those skilled in the art. The item of prior art on its own as read by one of skill in the art would, therefore, render the relevant claims invalid for obviousness under 35 U.S.C. § 103(a). Further, the asserted claims of the '192 Patent are obvious in view of at least a combination of any of the above cited references with at least one of the references in Appendix 1, 2, 3, 4, and/or 5.

The motivations to combine the references listed above are provided below in Section III.G.

3. Invalidity Under 35 U.S.C. § 112

The identified grounds noted below both individually and collectively render the Asserted Claims of the '192 patent invalid for failing to satisfy the indefiniteness, written description, and/or enablement requirements under the statutory requirements of § 112, ¶¶ 1-2. To the extent a claim element is contained within an element identified below or encompasses an element identified

below, that claim element also renders the claim invalid under § 112.

- “a software authoring interface configured to simultaneously visually emulate, via one or more profile display windows, a plurality of network characteristics indicative of performance of the mobile device when executing the application ... further configured to simulate a network connection state encountered by the mobile device” (claim 1)
- “profile display windows” (claim 1)
- “mobile device” (claims 1, 2)
- “software authoring interface” (claims 1, 2)
- “simultaneously visually emulate, via one or more profile display windows, a plurality of network characteristics indicative of performance of the mobile device when executing the application” (claim 1)
- “the software authoring interface is configured to enable a user to select from one or more connection simulations for testing how well mobile content performs on the mobile device” (claim 2)
- “connection simulations” (claim 2)
- “testing how well mobile content performs on the mobile device” (claim 2)

C. ’864 patent

1. Prior Art

Bank of America identifies the following prior art now known to Bank of America to anticipate and/or render obvious the asserted claim of the ’864 patent under at least 35 U.S.C. §§ 102(a), (b), (e), (g), and/or 103.

a. Prior Art Patents and Publications

The following patents and publications are prior art for the Asserted Claim of the '864 patent under at least 35 U.S.C. §§ 102(a), (b), (e), and/or (g), either expressly or inherently as understood by a POSA, or based on Wapp's apparent interpretation of the claims. Where an identified patent or publication describes a product, Bank of America intends to rely on the product described in such patent or publication as well as the patents and/or publication themselves.

- “The Mobeware Toolkit: Programmable Support for Adaptive Mobile Networking” by Oguz Angin et al. (“Angin”), published in August 1998, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. B01.
- “UBIWISE, A Simulator for Ubiquitous Computing Systems Design” by Barton et al. (“Barton”), published on April 29, 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. B02.
- U.S. Patent Application Publication No. US 2003/0156549 A1 to Binder et al. (“Binder”), filed on January 9, 2003, published on August 21, 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a), (b), and (e). *See* Ex. B03.
- BlackBerry Simulator Version 3.6 User Guide (DEF000333) (“Simulator User Guide”), published on April 10, 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. B04.
- BlackBerry Java Development Environment version 3.6 Developer Guide (DEF000084) (“Dev. Environment Dev. Guide”), published on March 21, 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. B04.
- U.S. Patent Application Publication No. US 2006/0282247 A1 to Brennan et al. (“Brennan”), filed on May 25, 2005, published on December 14, 2006, and qualifies as prior art at least under 35 U.S.C. § 102(e). *See* Ex. B05.
- U.S. Patent No. 7,877,247 to Nahata et al. (“Nahata”), filed on January 25, 2011, published on June 9, 2005, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (e). *See* Ex. B06.
- BREW 1.0 API – API Reference, https://developer.brewmp.com/reference/api-all/brew_mp_1.0.2. *See* Ex. B06.
- “Software Development for the Qualcomm BREW Platform” by Ray Rischpater (“Qualcomm Brew”), published in 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. B06.
- *Mobile Internet—An industry-wide paradigm shift?* (DEF004377) (“Andersson 1999”), published in 1999, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. B07.
- *An Experience in Evaluating Publish/Subscribe Services in a Wireless Network* (DEF007158) (“Caporuscio 2002”), published July 24–26, 2002, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. B07.

- *GPRS and 3G Wireless Applications* (DEF004329) (“Andersson 2001”), published in 2001, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. B07.
- GATE II / MATE Overview (DEF004385), on information and belief published prior to June 10, 2005, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. B07.
- MATE User Manual (DEF004419), published in 2001, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. B07.
- “J2ME in a Nutshell,” published in March 2002, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. B08.
- “J2ME Game Programming,” published in 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. B08.
- J2ME User Guide (v2.1), published in December 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. B08.
- J2ME User Guide (v.2.2), published in October 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. B08.
- U.S. Patent Application Publication No. 2004/0040010 to Kounik et al. (“Kounik”), filed on April 22, 2003, published on February 26, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a), (b), and (e). *See* Ex. B09.
- US Patent No. 2006/0277231 A1 to Kral et al. (“Kral”), filed on July 29, 2005, published on December 8, 2006, and qualifies as prior art at least under 35 U.S.C. § 102(e). *See* Ex. B10.
- Macromedia Delivers Flash Lite 1.1 (“Macromedia Press Release”), published June 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. B11.
- Macromedia - Flash 8 – Developing Flash Lite 2.x Applications (“Manual for Developing Flash Lite 2.x Applications”), published in January 2006, and qualifies as prior art at least under 35 U.S.C. § 102(a). *See* Ex. B11.
- “Palm OS Emulator,” published on April 1, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. B12.
- Palm OS Programmer’s Companion (Preliminary), published in 1999, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. B12.
- Palm OS Programming Bible by Lonnon R. Foster (“Foster”), published in 2000, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. B12.
- Palm OS Web Application Developer’s Guide by Ben Combee et al. (“Combee”), published in 2001, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. B12.
- Palm OS 5 ARM Programming – Palm OS 5 SDK (68K) R3 by Brian Maas et al. (“Maas”), published on July 30, 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. B12.
- Palm OS Programming – The Developer’s Guide by Neil Rhodes et al. (“Rhodes”), published in January 2002, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. B12.

- “A Trace-Driven Simulator for Palm OS Devices” by Hyrum D. Carroll (“Carroll”), published in September 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. B12.
- “Energy Estimation Tools for the Palm,” MSWiM, 2000, pp. 96–103 by Cignetti et al. (“Cignetti”), published on August 11, 2000, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. B12.
- Using Palm OS Emulator by Brian Maas (“Maas2”), published in March 2002, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. B12.
- Virtual Phone User’s Guide – Palm OS 5 SDK (68K) R3 by Brian Maas et al. (“Maas3”), published on July 30, 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. B12.
- Pocket PC 2002 SDK Emulator Images (“Pocket PC 2002”), published on February 13, 2002, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. B13.
- Pocket PC 2003 Second Edition Emulator Images (“Pocket PC 2003”), published on March 24, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. B13.
- TechRepublic, *Introduction to Pocket PC Development*, published on October 26, 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. B13.
- Girish Nurani Sankaranarayanan, CodeProject, *Get up and running with Windows CE* (Get Up and Running with Windows CE), published on July 22, 2002, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. B13.
- Microchip Technology Inc., *Programming the Pocket PC OS for Embedded IR Applications* (2004) (“Programming the Pocket PC”), published in 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. B13.
- Paul Yao & David Durant, .NET Compact Framework Programming with C# (“.NET Compact Framework Programming”), published on May 24, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. B13.
- AT&T Wireless, *devCentral White Paper: Developing Applications for Pocket PC and GPRS/EDGE* (“Developing Applications for Pocket PC”), published on October 15, 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. B13.
- Dennis Drogseth, Delivering WAN-ready applications with Shunra (“Drogseth”), published on October 11, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. B14.
- Business Wire, Network Computing Magazine Tests with Shunra Software’s Pre-emptive Infrastructure Performance Management Solutions (“Network Computing Magazine”), published on April 28, 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. B14.
- Shunra\Storm Solution Suite: The Complete Enterprise Performance Lab (“Shunra\Storm Solution Suite”), published on February 20, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. B14.
- How Shunra\Storm Works (“How Shunra\Storm Works”), published on April 28, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. B14.

- Testing Report: SHUNRA\STORM STX-100 (“Testing Report”), published in October 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. B14.
- SHUNRA\STORM – 3.0 Solution Suite – Bringing the Complete Enterprise Environment into Your Lab (“3.0 Solution Suite”), published in 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. B14.
- The Shunra Virtual Enterprise Architecture and Specifications (“Architecture and Specifications”), published on April 3, 2005, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. B14.
- Network World, Shunra Updates Network Simulation, Profiling Tool (“Shunra Updates”), published on February 6, 2006, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. B14.
- Shunra Virtual Enterprise 4.0 – Deliver It With Confidence (“Shunra Virtual Enterprise”), published on March 16, 2006, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. B14.
- InfoWorld, Shunra Releases an Enterprise Testing Storm (“InfoWorld”), published on March 26, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. B14.
- ADT Magazine, Product Briefs (“Product Briefs”), published on June 1, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. B14.
- Hotwire.com Selects Shunra Software to Proactively Ensure the Performance of its eCommerce Applications over the Internet (“Hotwire Selects Shunra”), published on November 8, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. B14.
- U.S. Patent No. 7,647,399 to Ofel (“Ofel”), filed on December 6, 2005, published on June 7, 2007, and qualifies as prior art at least under 35 U.S.C. § 102(a), (b), and (e). *See* Ex. B14.
- U.S. Patent No. 7,673,042 to Lesser (“Lesser”), filed on December 6, 2005, published on June 7, 2007, and qualifies as prior art at least under 35 U.S.C. § 102(a), (b), and (e). *See* Ex. B14.
- U.S. Patent No. 7,877,230 to Ofel, Jacobson, and Horowitz (“Ofel/Jacobson”). *See* Ex. B14.
- WIPO International Application Publication No. WO 99/63439 (“Daon”), published on June 4, 1998, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. B14.
- The Shunra Virtual Network (Desktop Edition) (“Virtual Network (Desktop Edition)”), published on March 31, 2005, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. B14.
- Shunra Stratus 2.0 Shortens Development Cycle (“Shunra Stratus 2.0”), published on May 7, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. B14.
- Shunra\Stratus 2.0 for Development Testing of Distributed Applications (“Shunra\Stratus 2.0 for Development Testing”), published on June 9, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. B14.

- Shunra\Stratus: Performance Debugger for Distributed Applications (“Shunra\Stratus: Performance Debugger”), published on April 5, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. B14.
- Shunra\Cloud: Network Emulator for the Small Business Performance Lab (“Shunra\Cloud: Network Emulator”), published on June 3, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. B14.
- Shunra\Cloud – Emulation Module (“Shunra\Cloud – Emulation Module”), published on August 15, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. B14.
- Mercury LoadRunner (“Mercury LoadRunner”), published on May 29, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. B14.
- Mercury LoadRunner – How it Works (“Mercury LoadRunner - How it Works”), published on June 15, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. B14.
- Mercury LoadRunner – Features and Benefits (“Mercury LoadRunner - Features and Benefits”), published on May 29, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. B14.
- The Shunra Virtual Network: Assess IT Services Over a Network Link Small Business Edition (Shunra\Cloud) (“Virtual Network”), published on March 7, 2005, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. B14.
- U.S. Patent Application Publication No. 2005/0047556 to Somerville et al. (“Somerville”), filed on August 25, 2003, published on March 3, 2005, and qualifies as prior art at least under 35 U.S.C. § 102(a), (b), and (e). *See* Ex. B15.
- U.S. Patent Application Publication No. US 2006/0009159 to Leung (“Leung”), filed on July 9, 2004, published on January 12, 2006, and qualifies as prior art at least under 35 U.S.C. § 102 (a), (b), and (e). *See* Ex. B16.
- U.S. Patent Application Publication No. 2005/0090243 to El Hussein et al. (“El Hussein”), filed on October 23, 2003, published on April 28, 2005, and qualifies as prior art at least under 35 U.S.C. § 102(a), (b), and (e). *See* Ex. B17.
- U.S. Patent Application Publication No. 2006/0140125 to Ottinger et al. (“Ottinger”), filed on December 23, 2004, published on June 29, 2006, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (e). *See* Ex. B18.
- UK Patent No. GB 2,398,456 A to Windred (“Windred”), published on August 18, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. B19.
- U.S. Patent Application Publication No. 2005/0090239 to Lee et al. (“Lee”), filed on October 22, 2003, published on April 28, 2005, and qualifies as prior art at least under 35 U.S.C. § 102(a), (b), and (e).
- U.S. Patent Application Publication No. 2003/0045298 to Linton et al. (“Linton”), filed on March 30, 2001, published on March 6, 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a), (b), and (e).
- “WISE – A Simulator Toolkit for Ubiquitous Computing Scenarios” by V. Vijayraghavan et al. (“Vijayraghavan”), published on October 22, 2002, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b).

- U.S. Patent No. 7,155,381 to Ryzl (“Ryzl”), filed on March 12, 2001, published on November 14, 2002, and qualifies as prior art at least under 35 U.S.C. § 102(a), (b), and (e).
- U.S. Patent No. 6,898,602 to Sayag (“Sayag”), filed on April 22, 2002, published on October 23, 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a), (b), and (e).
- WIPO Patent Application Pub. No. WO 2004/031951 A2 (“Poortman”) was published on April 15, 2004. It qualifies as prior art at least under 35 U.S.C. § 102 (a) and (b).
- U.S. Patent No. 6,311,324 (“Smith”) issued on October 30, 2001 and was filed on June 7, 1995. It qualifies as prior art at least under 35 U.S.C. § 102 (a), (b), and (e).

Bank of America’s investigation into prior art patent and publication references remains ongoing and Bank of America reserves the right to identify and rely on additional patent or publication references that describe or are otherwise related to the prior art systems identified below based on information obtained through discovery.

b. Prior Art Systems

The following systems are anticipatory prior art for the Asserted Claim of the ’864 patent under at least 35 U.S.C. §§ 102(a), (b) and/or (g):

- Products, components, systems, and methods invented, designed, developed, reduced to practice, and/or in public use or on sale related to BlackBerry Development Environment, as exemplified in claim charts in Exhibit B04. As part of these Invalidity Contentions, Bank of America has produced documents relating to the BlackBerry Development Environment. Based on information available to Bank of America, Bank of America believes that the BlackBerry Development Environment was conceived and/or reduced to practice by engineers at BlackBerry Limited at least before 2003, without being abandoned, suppressed, or concealed, and was in public use or on sale on or before 2003.
- Products, components, systems, and methods invented, designed, developed, reduced to practice, and/or in public use or on sale related to Qualcomm Binary Runtime Environment for Wireless Platform (“BREW”), as exemplified in claim charts in Exhibit B06. As part of these Invalidity Contentions, Bank of America has produced documents relating to the Qualcomm BREW. Based on information available to Bank of America, Bank of America believes that the Qualcomm BREW was conceived and/or reduced to practice by engineers at Qualcomm Incorporated at least before 2004, without being abandoned, suppressed, or concealed, and was in public use or on sale on or before 2004.

- Products, components, systems, and methods invented, designed, developed, reduced to practice, and/or in public use or on sale related to Ericsson's Global Application Test Environment II / Mobile Application Test Environment ("GATE II / MATE"), as exemplified in claim charts in Exhibit B07. As part of these Invalidity Contentions, Bank of America has produced documents relating to the GATE II / MATE. Based on information available to Bank of America, Bank of America believes that the GATE II / MATE was conceived and/or reduced to practice by engineers at Telefonaktiebolaget LM Ericsson at least before 2002, without being abandoned, suppressed, or concealed, and was in public use or on sale on or before 2002.
- Products, components, systems, and methods invented, designed, developed, reduced to practice, and/or in public use or on sale related to J2ME, as exemplified in claim charts in Exhibit B08. As part of these Invalidity Contentions, Bank of America has produced documents relating to the J2ME. Based on information available to Bank of America, Bank of America believes that the J2ME was conceived and/or reduced to practice by engineers at Sun Microsystems, Inc. at least before 2004, without being abandoned, suppressed, or concealed, and was in public use or on sale on or before 2004.
- Products, components, systems, and methods invented, designed, developed, reduced to practice, and/or in public use or on sale related to Macromedia Flash Lite, as exemplified in claim charts in Exhibit B11. As part of these Invalidity Contentions, Bank of America has produced documents relating to the Macromedia Flash Lite. Based on information available to Bank of America, Bank of America believes that the Macromedia Flash Lite was conceived and/or reduced to practice by engineers at Macromedia Inc., later acquired by Adobe, at least before 2004, without being abandoned, suppressed, or concealed, and was in public use or on sale on or before 2004.
- Products, components, systems, and methods invented, designed, developed, reduced to practice, and/or in public use or on sale related to Palm OS Emulator, as exemplified in claim charts in Exhibit B12. As part of these Invalidity Contentions, Bank of America has produced documents relating to the Palm OS Emulator. Based on information available to Bank of America, Bank of America believes that the Palm OS Emulator was conceived and/or reduced to practice by engineers at Palm Inc. at least before 2004, without being abandoned, suppressed, or concealed, and was in public use or on sale on or before 2004.
- Products, components, systems, and methods invented, designed, developed, reduced to practice, and/or in public use or on sale related to Pocket PC Emulator, as exemplified in claim charts in Exhibit B13. As part of these Invalidity Contentions, Bank of America has produced documents relating to the Pocket PC Emulator. Based on information available to Bank of America, Bank of America believes that the Pocket PC Emulator was conceived and/or reduced to practice by engineers at Microsoft Corporation at least before 2005, without being abandoned, suppressed, or concealed, and was in public use or on sale on or before 2005.

- Products, components, systems, and methods invented, designed, developed, reduced to practice, and/or in public use or on sale related to the Shunra system, as exemplified in claim charts in Exhibit B14. As part of these Invalidity Contentions, Bank of America has produced documents relating to the Shunra system. Based on information available to Bank of America, Bank of America believes that the Shunra system was conceived and/or reduced to practice by engineers at Shunra Software Ltd. at least before 2004, without being abandoned, suppressed, or concealed, and was in public use or on sale on or before 2004.

Bank of America's investigation into prior art systems remains ongoing and Bank of America reserves the right to identify and rely on systems that represent different versions or are otherwise related variations of the systems identified above. Bank of America further reserves the right to revise, amend, update, and/or supplement the information provided in these Invalidity Contention (including the attached claim charts) based on additional information and evidence obtained through discovery. Bank of America also reserves the right to rely on any system, product, or public knowledge or use that embodies or otherwise incorporates any of the prior art patents and publications listed above. In addition to the prior art products, components, systems, and methods described above, Bank of America also reserves the right to rely on documents and publications relating to the prior art listed above as prior art publications.

2. Anticipation and Obviousness

Bank of America contends that each item of prior art in Exhibits B1 to B19 anticipates the asserted claim of the '864 Patent. In the alternative, each item of prior art in Exhibits B1 to B19, when combined with the knowledge of a POSA and/or the applicant admitted prior art, renders obvious the asserted claim of the '864 Patent.

To the extent any limitation is not explicitly or inherently disclosed by an item of prior art listed in Exhibits B1 to B19, the claimed subject matter as a whole would have been obvious to one skilled in the art at the time of the alleged invention, in view of the state of the art and knowledge of those skilled in the art. The item of prior art on its own as read by one of skill in the

art would, therefore, render the relevant claim invalid for obviousness under 35 U.S.C. § 103(a). Further, the asserted claim of the '864 Patent is obvious in view of at least a combination of any of the above cited references with at least one of the references in Appendix 1, 2, 3, 4, and/or 5.

The motivations to combine the references listed above are provided below in Section III.G.

3. Invalidity Under 35 U.S.C. § 112

The identified grounds noted below both individually and collectively render the Asserted Claim of the '864 patent invalid for failing to satisfy the indefiniteness, written description, and/or enablement requirements under the statutory requirements of § 112, ¶¶ 1-2. To the extent a claim element is contained within an element identified below or encompasses an element identified below, that claim element also renders the claim invalid under § 112.

- “software configured to simulate, via one or more profile display windows, a plurality of network characteristics indicative of performance of the mobile device when executing the application” (claim 1)
- “profile display windows” (claim 1)
- “mobile device” (claim 1)
- “a plurality of network characteristics indicative of performance of the mobile device when executing the application” (claim 1)
- “wherein the network characteristics are based on data of interaction with networks in non-simulated environments” (claim 1)

D. '678 patent

1. Prior Art

Bank of America identifies the following prior art now known to Bank of America to anticipate and/or render obvious the asserted claim of the '678 patent under at least 35 U.S.C. §§

102(a), (b), (e), (g), and/or 103.

a. Prior Art Patents and Publications

The following patents and publications are prior art for the Asserted Claim of the '678 patent under at least 35 U.S.C. §§ 102(a), (b), (e), and/or (g), either expressly or inherently as understood by a POSA, or based on Wapp's apparent interpretation of the claims. Where an identified patent or publication describes a product, Bank of America intends to rely on the product described in such patent or publication as well as the patents and/or publication themselves.

- “The Mobeware Toolkit: Programmable Support for Adaptive Mobile Networking” by Oguz Angin et al. (“Angin”), published in August 1998, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. C01.
- “UBIWISE, A Simulator for Ubiquitous Computing Systems Design” by Barton et al. (“Barton”), published on April 29, 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. C02.
- U.S. Patent Application Publication No. US 2003/0156549 A1 to Binder et al. (“Binder”), filed on January 9, 2003, published on August 21, 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a), (b), and (e). *See* Ex. C03.
- BlackBerry Simulator Version 3.6 User Guide (DEF000333) (“Simulator User Guide”), published on April 10, 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. C04.
- BlackBerry Java Development Environment version 3.6 Developer Guide (DEF000084) (“Dev. Environment Dev. Guide”), published on March 21, 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. C04.
- U.S. Patent Application Publication No. US 2006/0282247 A1 to Brennan et al. (“Brennan”), filed on May 25, 2005, published on December 14, 2006, and qualifies as prior art at least under 35 U.S.C. § 102(e). *See* Ex. C05.
- U.S. Patent No. 7,877,247 to Nahata et al. (“Nahata”), filed on January 25, 2011, published on June 9, 2005, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (e). *See* Ex. C06.
- BREW 1.0 API – API Reference, https://developer.brewmp.com/reference/api-all/brew_mp_1.0.2. *See* Ex. C06.
- “Software Development for the Qualcomm BREW Platform” by Ray Rischpater (“Qualcomm Brew”), published in 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. C06.
- *Mobile Internet—An industry-wide paradigm shift?* (DEF004377) (“Andersson 1999”), published in 1999, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. C07.
- *An Experience in Evaluating Publish/Subscribe Services in a Wireless Network* (DEF007158) (“Caporuscio 2002”), published July 24–26, 2002, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. C07.

- *GPRS and 3G Wireless Applications* (DEF004329) (“Andersson 2001”), published in 2001, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. C07.
- GATE II / MATE Overview (DEF004385), on information and belief published prior to June 10, 2005, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. C07.
- MATE User Manual (DEF004419), published in 2001, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. C07.
- “J2ME in a Nutshell,” published in March 2002, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. C08.
- “J2ME Game Programming,” published in 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. C08.
- J2ME User Guide (v2.1), published in December 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. C08.
- J2ME User Guide (v.2.2), published in October 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. C08.
- U.S. Patent Application Publication No. 2004/0040010 to Kounik et al. (“Kounik”), filed on April 22, 2003, published on February 26, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a), (b), and (e). *See* Ex. C09.
- US Patent No. 2006/0277231 A1 to Kral et al. (“Kral”), filed on July 29, 2005, published on December 8, 2006, and qualifies as prior art at least under 35 U.S.C. § 102(e). *See* Ex. C10.
- Macromedia Delivers Flash Lite 1.1 (“Macromedia Press Release”), published June 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. C11.
- Macromedia - Flash 8 – Developing Flash Lite 2.x Applications (“Manual for Developing Flash Lite 2.x Applications”), published in January 2006, and qualifies as prior art at least under 35 U.S.C. § 102(a). *See* Ex. C11.
- “Palm OS Emulator,” published on April 1, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. C12.
- Palm OS Programmer’s Companion (Preliminary), published in 1999, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. C12.
- Palm OS Programming Bible by Lonnon R. Foster (“Foster”), published in 2000, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. C12.
- Palm OS Web Application Developer’s Guide by Ben Combee et al. (“Combee”), published in 2001, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. C12.
- Palm OS 5 ARM Programming – Palm OS 5 SDK (68K) R3 by Brian Maas et al. (“Maas”), published on July 30, 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. C12.
- Palm OS Programming – The Developer’s Guide by Neil Rhodes et al. (“Rhodes”), published in January 2002, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. C12.

- “A Trace-Driven Simulator for Palm OS Devices” by Hyrum D. Carroll (“Carroll”), published in September 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. C12.
- “Energy Estimation Tools for the Palm,” MSWiM, 2000, pp. 96–103 by Cignetti et al. (“Cignetti”), published on August 11, 2000, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. C12.
- Using Palm OS Emulator by Brian Maas (“Maas2”), published in March 2002, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. C12.
- Virtual Phone User’s Guide – Palm OS 5 SDK (68K) R3 by Brian Maas et al. (“Maas3”), published on July 30, 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. C12.
- Pocket PC 2002 SDK Emulator Images (“Pocket PC 2002”), published on February 13, 2002, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. C13.
- Pocket PC 2003 Second Edition Emulator Images (“Pocket PC 2003”), published on March 24, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. C13.
- TechRepublic, *Introduction to Pocket PC Development*, published on October 26, 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. C13.
- Girish Nurani Sankaranarayanan, CodeProject, *Get up and running with Windows CE* (Get Up and Running with Windows CE), published on July 22, 2002, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. C13.
- Microchip Technology Inc., *Programming the Pocket PC OS for Embedded IR Applications* (2004) (“Programming the Pocket PC”), published in 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. C13.
- Paul Yao & David Durant, .NET Compact Framework Programming with C# (“.NET Compact Framework Programming”), published on May 24, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. C13.
- AT&T Wireless, *devCentral White Paper: Developing Applications for Pocket PC and GPRS/EDGE* (“Developing Applications for Pocket PC”), published on October 15, 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. C13.
- Dennis Drogseth, Delivering WAN-ready applications with Shunra (“Drogseth”), published on October 11, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. C14.
- Business Wire, Network Computing Magazine Tests with Shunra Software’s Pre-emptive Infrastructure Performance Management Solutions (“Network Computing Magazine”), published on April 28, 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. C14.
- Shunra\Storm Solution Suite: The Complete Enterprise Performance Lab (“Shunra\Storm Solution Suite”), published on February 20, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. C14.
- How Shunra\Storm Works (“How Shunra\Storm Works”), published on April 28, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. C14.

- Testing Report: SHUNRA\STORM STX-100 (“Testing Report”), published in October 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. C14.
- SHUNRA\STORM – 3.0 Solution Suite – Bringing the Complete Enterprise Environment into Your Lab (“3.0 Solution Suite”), published in 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. C14.
- The Shunra Virtual Enterprise Architecture and Specifications (“Architecture and Specifications”), published on April 3, 2005, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. C14.
- Network World, Shunra Updates Network Simulation, Profiling Tool (“Shunra Updates”), published on February 6, 2006, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. C14.
- Shunra Virtual Enterprise 4.0 – Deliver It With Confidence (“Shunra Virtual Enterprise”), published on March 16, 2006, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. C14.
- InfoWorld, Shunra Releases an Enterprise Testing Storm (“InfoWorld”), published on March 26, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. C14.
- ADT Magazine, Product Briefs (“Product Briefs”), published on June 1, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. C14.
- Hotwire.com Selects Shunra Software to Proactively Ensure the Performance of its eCommerce Applications over the Internet (“Hotwire Selects Shunra”), published on November 8, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. C14.
- U.S. Patent No. 7,647,399 to Ofel (“Ofel”), filed on December 6, 2005, published on June 7, 2007, and qualifies as prior art at least under 35 U.S.C. § 102(a), (b), and (e). *See* Ex. C14.
- U.S. Patent No. 7,673,042 to Lesser (“Lesser”), filed on December 6, 2005, published on June 7, 2007, and qualifies as prior art at least under 35 U.S.C. § 102(a), (b), and (e). *See* Ex. C14.
- U.S. Patent No. 7,877,230 to Ofel, Jacobson, and Horowitz (“Ofel/Jacobson”). *See* Ex. C14.
- WIPO International Application Publication No. WO 99/63439 (“Daon”), published on June 4, 1998, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. C14.
- The Shunra Virtual Network (Desktop Edition) (“Virtual Network (Desktop Edition)”), published on March 31, 2005, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. C14.
- Shunra Stratus 2.0 Shortens Development Cycle (“Shunra Stratus 2.0”), published on May 7, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. C14.
- Shunra\Stratus 2.0 for Development Testing of Distributed Applications (“Shunra\Stratus 2.0 for Development Testing”), published on June 9, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. C14.

- Shunra\Stratus: Performance Debugger for Distributed Applications (“Shunra\Stratus: Performance Debugger”), published on April 5, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. C14.
- Shunra\Cloud: Network Emulator for the Small Business Performance Lab (“Shunra\Cloud: Network Emulator”), published on June 3, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. C14.
- Shunra\Cloud – Emulation Module (“Shunra\Cloud – Emulation Module”), published on August 15, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. C14.
- Mercury LoadRunner (“Mercury LoadRunner”), published on May 29, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. C14.
- Mercury LoadRunner – How it Works (“Mercury LoadRunner - How it Works”), published on June 15, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. C14.
- Mercury LoadRunner – Features and Benefits (“Mercury LoadRunner - Features and Benefits”), published on May 29, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. C14.
- The Shunra Virtual Network: Assess IT Services Over a Network Link Small Business Edition (Shunra\Cloud) (“Virtual Network”), published on March 7, 2005, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. C14.
- U.S. Patent Application Publication No. 2005/0047556 to Somerville et al. (“Somerville”), filed on August 25, 2003, published on March 3, 2005, and qualifies as prior art at least under 35 U.S.C. § 102(a), (b), and (e). *See* Ex. C15.
- U.S. Patent Application Publication No. US 2006/0009159 to Leung (“Leung”), filed on July 9, 2004, published on January 12, 2006, and qualifies as prior art at least under 35 U.S.C. § 102 (a), (b), and (e). *See* Ex. C16.
- U.S. Patent Application Publication No. 2005/0090243 to El Hussein et al. (“El Hussein”), filed on October 23, 2003, published on April 28, 2005, and qualifies as prior art at least under 35 U.S.C. § 102(a), (b), and (e). *See* Ex. C17.
- U.S. Patent Application Publication No. 2006/0140125 to Ottinger et al. (“Ottinger”), filed on December 23, 2004, published on June 29, 2006, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (e). *See* Ex. C18.
- UK Patent No. GB 2,398,456 A to Windred (“Windred”), published on August 18, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. C19.
- U.S. Patent Application Publication No. 2005/0090239 to Lee et al. (“Lee”), filed on October 22, 2003, published on April 28, 2005, and qualifies as prior art at least under 35 U.S.C. § 102(a), (b), and (e).
- U.S. Patent Application Publication No. 2003/0045298 to Linton et al. (“Linton”), filed on March 30, 2001, published on March 6, 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a), (b), and (e).
- “WISE – A Simulator Toolkit for Ubiquitous Computing Scenarios” by V. Vijayraghavan et al. (“Vijayraghavan”), published on October 22, 2002, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b).

- U.S. Patent No. 7,155,381 to Ryzl (“Ryzl”), filed on March 12, 2001, published on November 14, 2002, and qualifies as prior art at least under 35 U.S.C. § 102(a), (b), and (e).
- U.S. Patent No. 6,898,602 to Sayag (“Sayag”), filed on April 22, 2002, published on October 23, 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a), (b), and (e).
- WIPO Patent Application Pub. No. WO 2004/031951 A2 (“Poortman”) was published on April 15, 2004. It qualifies as prior art at least under 35 U.S.C. § 102 (a) and (b).
- U.S. Patent No. 6,311,324 (“Smith”) issued on October 30, 2001 and was filed on June 7, 1995. It qualifies as prior art at least under 35 U.S.C. § 102 (a), (b), and (e).

Bank of America’s investigation into prior art patent and publication references remains ongoing and Bank of America reserves the right to identify and rely on additional patent or publication references that describe or are otherwise related to the prior art systems identified below based on information obtained through discovery.

b. Prior Art Systems

The following systems are anticipatory prior art for the Asserted Claim of the ’678 patent under at least 35 U.S.C. §§ 102(a), (b) and/or (g):

- Products, components, systems, and methods invented, designed, developed, reduced to practice, and/or in public use or on sale related to BlackBerry Development Environment, as exemplified in claim charts in Exhibit C04. As part of these Invalidity Contentions, Bank of America has produced documents relating to the BlackBerry Development Environment. Based on information available to Bank of America, Bank of America believes that the BlackBerry Development Environment was conceived and/or reduced to practice by engineers at BlackBerry Limited at least before 2003, without being abandoned, suppressed, or concealed, and was in public use or on sale on or before 2003.
- Products, components, systems, and methods invented, designed, developed, reduced to practice, and/or in public use or on sale related to Qualcomm Binary Runtime Environment for Wireless Platform (“BREW”), as exemplified in claim charts in Exhibit C06. As part of these Invalidity Contentions, Bank of America has produced documents relating to the Qualcomm BREW. Based on information available to Bank of America, Bank of America believes that the Qualcomm BREW was conceived and/or reduced to practice by engineers at Qualcomm Incorporated at least before 2004, without being abandoned, suppressed, or concealed, and was in public use or on sale on or before 2004.

- Products, components, systems, and methods invented, designed, developed, reduced to practice, and/or in public use or on sale related to Ericsson's Global Application Test Environment II / Mobile Application Test Environment ("GATE II / MATE"), as exemplified in claim charts in Exhibit C07. As part of these Invalidity Contentions, Bank of America has produced documents relating to the GATE II / MATE. Based on information available to Bank of America, Bank of America believes that the GATE II / MATE was conceived and/or reduced to practice by engineers at Telefonaktiebolaget LM Ericsson at least before 2002, without being abandoned, suppressed, or concealed, and was in public use or on sale on or before 2002.
- Products, components, systems, and methods invented, designed, developed, reduced to practice, and/or in public use or on sale related to J2ME, as exemplified in claim charts in Exhibit C08. As part of these Invalidity Contentions, Bank of America has produced documents relating to the J2ME. Based on information available to Bank of America, Bank of America believes that the J2ME was conceived and/or reduced to practice by engineers at Sun Microsystems, Inc. at least before 2004, without being abandoned, suppressed, or concealed, and was in public use or on sale on or before 2004.
- Products, components, systems, and methods invented, designed, developed, reduced to practice, and/or in public use or on sale related to Macromedia Flash Lite, as exemplified in claim charts in Exhibit C11. As part of these Invalidity Contentions, Bank of America has produced documents relating to the Macromedia Flash Lite. Based on information available to Bank of America, Bank of America believes that the Macromedia Flash Lite was conceived and/or reduced to practice by engineers at Macromedia Inc., later acquired by Adobe, at least before 2004, without being abandoned, suppressed, or concealed, and was in public use or on sale on or before 2004.
- Products, components, systems, and methods invented, designed, developed, reduced to practice, and/or in public use or on sale related to Palm OS Emulator, as exemplified in claim charts in Exhibit C12. As part of these Invalidity Contentions, Bank of America has produced documents relating to the Palm OS Emulator. Based on information available to Bank of America, Bank of America believes that the Palm OS Emulator was conceived and/or reduced to practice by engineers at Palm Inc. at least before 2004, without being abandoned, suppressed, or concealed, and was in public use or on sale on or before 2004.
- Products, components, systems, and methods invented, designed, developed, reduced to practice, and/or in public use or on sale related to Pocket PC Emulator, as exemplified in claim charts in Exhibit C13. As part of these Invalidity Contentions, Bank of America has produced documents relating to the Pocket PC Emulator. Based on information available to Bank of America, Bank of America believes that the Pocket PC Emulator was conceived and/or reduced to practice by engineers at Microsoft Corporation at least before 2005, without being abandoned, suppressed, or concealed, and was in public use or on sale on or before 2005.

- Products, components, systems, and methods invented, designed, developed, reduced to practice, and/or in public use or on sale related to the Shunra system, as exemplified in claim charts in Exhibit C14. As part of these Invalidity Contentions, Bank of America has produced documents relating to the Shunra system. Based on information available to Bank of America, Bank of America believes that the Shunra system was conceived and/or reduced to practice by engineers at Shunra Software Ltd. at least before 2004, without being abandoned, suppressed, or concealed, and was in public use or on sale on or before 2004.

Bank of America's investigation into prior art systems remains ongoing and Bank of America reserves the right to identify and rely on systems that represent different versions or are otherwise related variations of the systems identified above. Bank of America further reserves the right to revise, amend, update, and/or supplement the information provided in these Invalidity Contention (including the attached claim charts) based on additional information and evidence obtained through discovery. Bank of America also reserves the right to rely on any system, product, or public knowledge or use that embodies or otherwise incorporates any of the prior art patents and publications listed above. In addition to the prior art products, components, systems, and methods described above, Bank of America also reserves the right to rely on documents and publications relating to the prior art listed above as prior art publications.

2. Anticipation and Obviousness

Bank of America contends that each item of prior art in Exhibits C1 to C19 anticipates the asserted claim of the '678 Patent. In the alternative, each item of prior art in Exhibits C1 to C19, when combined with the knowledge of a POSA and/or the applicant admitted prior art, renders obvious the asserted claim of the '678 Patent.

To the extent any limitation is not explicitly or inherently disclosed by an item of prior art listed in Exhibits C1 to C19, the claimed subject matter as a whole would have been obvious to one skilled in the art at the time of the alleged invention, in view of the state of the art and knowledge of those skilled in the art. The item of prior art on its own as read by one of skill in the

art would, therefore, render the relevant claim invalid for obviousness under 35 U.S.C. § 103(a). Further, the asserted claim of the '678 Patent is obvious in view of at least a combination of any of the above cited references with at least one of the references in Appendix 1, 2, 3, 4, and/or 5.

The motivations to combine the references listed above are provided below in Section III.G.

3. Invalidity Under 35 U.S.C. § 112

The identified grounds noted below both individually and collectively render the Asserted Claim of the '678 patent invalid for failing to satisfy the indefiniteness, written description, and/or enablement requirements under the statutory requirements of § 112, ¶¶ 1-2. To the extent a claim element is contained within an element identified below or encompasses an element identified below, that claim element also renders the claim invalid under § 112.

- “a software testing interface configured to simultaneously visually simulate, via one or more profile display windows, a plurality of operator network characteristics including at least bandwidth availability indicative of performance of the mobile device when executing the application” (claim 45)
- “software testing interface” (claim 45)
- “profile display windows” (claim 45)
- “mobile device” (claim 45)
- “visually simulate ... a plurality of operator network characteristics including at least bandwidth availability indicative of performance of the mobile device when executing the application” (claim 45)
- “wherein the bandwidth availability is based at least in part on bandwidth data predetermined from interactions between one or more mobile devices and at least

one operator network” (claim 45)

- “interaction with a network enables the software to import real-world mobile network profiles” (claim 45)

E. ’811 patent

1. Prior Art

Bank of America identifies the following prior art now known to Bank of America to anticipate and/or render obvious one or more claims of the ’811 patent under at least 35 U.S.C. §§ 102(a), (b), (e), (g), and/or 103.

a. Prior Art Patents and Publications

The following patents and publications are prior art for the Asserted Claims of the ’811 patent under at least 35 U.S.C. §§ 102(a), (b), (e), and/or (g), either expressly or inherently as understood by a POSA, or based on Wapp’s apparent interpretation of the claims. Where an identified patent or publication describes a product, Bank of America intends to rely on the product described in such patent or publication as well as the patents and/or publication themselves.

- “The Mobeware Toolkit: Programmable Support for Adaptive Mobile Networking” by Oguz Angin et al. (“Angin”), published in August 1998, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. D01.
- “UBIWISE, A Simulator for Ubiquitous Computing Systems Design” by Barton et al. (“Barton”), published on April 29, 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. D02.
- U.S. Patent Application Publication No. US 2003/0156549 A1 to Binder et al. (“Binder”), filed on January 9, 2003, published on August 21, 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a), (b), and (e). *See* Ex. D03.
- BlackBerry Simulator Version 3.6 User Guide (DEF000333) (“Simulator User Guide”), published on April 10, 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. D04.
- BlackBerry Java Development Environment version 3.6 Developer Guide (DEF000084) (“Dev. Environment Dev. Guide”), published on March 21, 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. D04.
- U.S. Patent Application Publication No. US 2006/0282247 A1 to Brennan et al. (“Brennan”), filed on May 25, 2005, published on December 14, 2006, and qualifies as prior art at least under 35 U.S.C. § 102(e). *See* Ex. D05.

- U.S. Patent No. 7,877,247 to Nahata et al. (“Nahata”), filed on January 25, 2011, published on June 9, 2005, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (e). *See* Ex. D06.
- BREW 1.0 API – API Reference, https://developer.brewmp.com/reference/api-all/brew_mp_1.0.2. *See* Ex. D06.
- “Software Development for the Qualcomm BREW Platform” by Ray Rischpater (“Qualcomm Brew”), published in 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. D06.
- *Mobile Internet—An industry-wide paradigm shift?* (DEF004377) (“Andersson 1999”), published in 1999, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. D07.
- *An Experience in Evaluating Publish/Subscribe Services in a Wireless Network* (DEF007158) (“Caporuscio 2002”), published July 24–26, 2002, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. D07.
- *GPRS and 3G Wireless Applications* (DEF004329) (“Andersson 2001”), published in 2001, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. D07.
- GATE II / MATE Overview (DEF004385), on information and belief published prior to June 10, 2005, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. D07.
- MATE User Manual (DEF004419), published in 2001, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. D07.
- “J2ME in a Nutshell,” published in March 2002, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. D08.
- “J2ME Game Programming,” published in 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. D08.
- J2ME User Guide (v2.1), published in December 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. D08.
- J2ME User Guide (v.2.2), published in October 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. D08.
- U.S. Patent Application Publication No. 2004/0040010 to Kounik et al. (“Kounik”), filed on April 22, 2003, published on February 26, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a), (b), and (e). *See* Ex. D09.
- US Patent No. 2006/0277231 A1 to Kral et al. (“Kral”), filed on July 29, 2005, published on December 8, 2006, and qualifies as prior art at least under 35 U.S.C. § 102(e). *See* Ex. D10.
- Macromedia Delivers Flash Lite 1.1 (“Macromedia Press Release”), published June 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. D11.
- Macromedia - Flash 8 – Developing Flash Lite 2.x Applications (“Manual for Developing Flash Lite 2.x Applications”), published in January 2006, and qualifies as prior art at least under 35 U.S.C. § 102(a). *See* Ex. D11.
- “Palm OS Emulator,” published on April 1, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. D12.

- Palm OS Programmer's Companion (Preliminary), published in 1999, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. D12.
- Palm OS Programming Bible by Lonnon R. Foster ("Foster"), published in 2000, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. D12.
- Palm OS Web Application Developer's Guide by Ben Combee et al. ("Combee"), published in 2001, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. D12.
- Palm OS 5 ARM Programming – Palm OS 5 SDK (68K) R3 by Brian Maas et al. ("Maas"), published on July 30, 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. D12.
- Palm OS Programming – The Developer's Guide by Neil Rhodes et al. ("Rhodes"), published in January 2002, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. D12.
- "A Trace-Driven Simulator for Palm OS Devices" by Hyrum D. Carroll ("Carroll"), published in September 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. D12.
- "Energy Estimation Tools for the Palm," MSWiM, 2000, pp. 96–103 by Cignetti et al. ("Cignetti"), published on August 11, 2000, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. D12.
- Using Palm OS Emulator by Brian Maas ("Maas2"), published in March 2002, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. D12.
- Virtual Phone User's Guide – Palm OS 5 SDK (68K) R3 by Brian Maas et al. ("Maas3"), published on July 30, 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. D12.
- Pocket PC 2002 SDK Emulator Images ("Pocket PC 2002"), published on February 13, 2002, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. D13.
- Pocket PC 2003 Second Edition Emulator Images ("Pocket PC 2003"), published on March 24, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. D13.
- TechRepublic, *Introduction to Pocket PC Development*, published on October 26, 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. D13.
- Girish Nurani Sankaranarayanan, CodeProject, *Get up and running with Windows CE* (Get Up and Running with Windows CE), published on July 22, 2002, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. D13.
- Microchip Technology Inc., *Programming the Pocket PC OS for Embedded IR Applications* (2004) ("Programming the Pocket PC"), published in 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. D13.
- Paul Yao & David Durant, .NET Compact Framework Programming with C# (.NET Compact Framework Programming), published on May 24, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. D13.
- AT&T Wireless, *devCentral White Paper: Developing Applications for Pocket PC and GPRS/EDGE* ("Developing Applications for Pocket PC"), published on

October 15, 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. D13.

- Dennis Drogseth, Delivering WAN-ready applications with Shunra (“Drogseth”), published on October 11, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. D14.
- Business Wire, Network Computing Magazine Tests with Shunra Software’s Pre-emptive Infrastructure Performance Management Solutions (“Network Computing Magazine”), published on April 28, 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. D14.
- Shunra\Storm Solution Suite: The Complete Enterprise Performance Lab (“Shunra\Storm Solution Suite”), published on February 20, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. D14.
- How Shunra\Storm Works (“How Shunra\Storm Works”), published on April 28, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. D14.
- Testing Report: SHUNRA\STORM STX-100 (“Testing Report”), published in October 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. D14.
- SHUNRA\STORM – 3.0 Solution Suite – Bringing the Complete Enterprise Environment into Your Lab (“3.0 Solution Suite”), published in 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. D14.
- The Shunra Virtual Enterprise Architecture and Specifications (“Architecture and Specifications”), published on April 3, 2005, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. D14.
- Network World, Shunra Updates Network Simulation, Profiling Tool (“Shunra Updates”), published on February 6, 2006, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. D14.
- Shunra Virtual Enterprise 4.0 – Deliver It With Confidence (“Shunra Virtual Enterprise”), published on March 16, 2006, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. D14.
- InfoWorld, Shunra Releases an Enterprise Testing Storm (“InfoWorld”), published on March 26, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. D14.
- ADT Magazine, Product Briefs (“Product Briefs”), published on June 1, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. D14.
- Hotwire.com Selects Shunra Software to Proactively Ensure the Performance of its eCommerce Applications over the Internet (“Hotwire Selects Shunra”), published on November 8, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. D14.
- U.S. Patent No. 7,647,399 to Ofel (“Ofel”), filed on December 6, 2005, published on June 7, 2007, and qualifies as prior art at least under 35 U.S.C. § 102(a), (b), and (e). *See* Ex. D14.
- U.S. Patent No. 7,673,042 to Lesser (“Lesser”), filed on December 6, 2005, published on June 7, 2007, and qualifies as prior art at least under 35 U.S.C. § 102(a), (b), and (e). *See* Ex. D14.

- U.S. Patent No. 7,877,230 to Ofel, Jacobson, and Horowitz (“Ofel/Jacobson”). *See* Ex. D14.
- WIPO International Application Publication No. WO 99/63439 (“Daon”), published on June 4, 1998, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. D14.
- The Shunra Virtual Network (Desktop Edition) (“Virtual Network (Desktop Edition)”), published on March 31, 2005, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. D14.
- Shunra Stratus 2.0 Shortens Development Cycle (“Shunra Stratus 2.0”), published on May 7, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. D14.
- Shunra\Stratus 2.0 for Development Testing of Distributed Applications (“Shunra\Stratus 2.0 for Development Testing”), published on June 9, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. D14.
- Shunra\Stratus: Performance Debugger for Distributed Applications (“Shunra\Stratus: Performance Debugger”), published on April 5, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. D14.
- Shunra\Cloud: Network Emulator for the Small Business Performance Lab (“Shunra\Cloud: Network Emulator”), published on June 3, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. D14.
- Shunra\Cloud – Emulation Module (“Shunra\Cloud – Emulation Module”), published on August 15, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. D14.
- Mercury LoadRunner (“Mercury LoadRunner”), published on May 29, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. D14.
- Mercury LoadRunner – How it Works (“Mercury LoadRunner - How it Works”), published on June 15, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. D14.
- Mercury LoadRunner – Features and Benefits (“Mercury LoadRunner - Features and Benefits”), published on May 29, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. D14.
- The Shunra Virtual Network: Assess IT Services Over a Network Link Small Business Edition (Shunra\Cloud) (“Virtual Network”), published on March 7, 2005, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. D14.
- U.S. Patent Application Publication No. 2005/0047556 to Somerville et al. (“Somerville”), filed on August 25, 2003, published on March 3, 2005, and qualifies as prior art at least under 35 U.S.C. § 102(a), (b), and (e). *See* Ex. D15.
- U.S. Patent Application Publication No. US 2006/0009159 to Leung (“Leung”), filed on July 9, 2004, published on January 12, 2006, and qualifies as prior art at least under 35 U.S.C. § 102 (a), (b), and (e).
- U.S. Patent Application Publication No. 2005/0090243 to El Hussein et al. (“El Hussein”), filed on October 23, 2003, published on April 28, 2005, and qualifies as prior art at least under 35 U.S.C. § 102(a), (b), and (e).

- U.S. Patent Application Publication No. 2006/0140125 to Ottinger et al. (“Ottinger”), filed on December 23, 2004, published on June 29, 2006, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (e).
- UK Patent No. GB 2,398,456 A to Windred (“Windred”), published on August 18, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b).
- U.S. Patent Application Publication No. 2005/0090239 to Lee et al. (“Lee”), filed on October 22, 2003, published on April 28, 2005, and qualifies as prior art at least under 35 U.S.C. § 102(a), (b), and (e).
- U.S. Patent Application Publication No. 2003/0045298 to Linton et al. (“Linton”), filed on March 30, 2001, published on March 6, 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a), (b), and (e).
- “WISE – A Simulator Toolkit for Ubiquitous Computing Scenarios” by V. Vijayraghavan et al. (“Vijayraghavan”), published on October 22, 2002, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b).
- U.S. Patent No. 7,155,381 to Ryzl (“Ryzl”), filed on March 12, 2001, published on November 14, 2002, and qualifies as prior art at least under 35 U.S.C. § 102(a), (b), and (e).
- U.S. Patent No. 6,898,602 to Sayag (“Sayag”), filed on April 22, 2002, published on October 23, 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a), (b), and (e).
- WIPO Patent Application Pub. No. WO 2004/031951 A2 (“Poortman”) was published on April 15, 2004. It qualifies as prior art at least under 35 U.S.C. § 102(a) and (b).
- U.S. Patent No. 6,311,324 (“Smith”) issued on October 30, 2001 and was filed on June 7, 1995. It qualifies as prior art at least under 35 U.S.C. § 102(a), (b), and (e).

Bank of America’s investigation into prior art patent and publication references remains ongoing and Bank of America reserves the right to identify and rely on additional patent or publication references that describe or are otherwise related to the prior art systems identified below based on information obtained through discovery.

b. Prior Art Systems

The following systems are anticipatory prior art for the Asserted Claims of the ’811 patent under at least 35 U.S.C. §§ 102(a), (b) and/or (g):

- Products, components, systems, and methods invented, designed, developed, reduced to practice, and/or in public use or on sale related to BlackBerry Development Environment, as exemplified in claim charts in Exhibit D04. As part of these Invalidity Contentions, Bank of America has produced documents relating to the BlackBerry Development Environment. Based on information available to

Bank of America, Bank of America believes that the BlackBerry Development Environment was conceived and/or reduced to practice by engineers at BlackBerry Limited at least before 2003, without being abandoned, suppressed, or concealed, and was in public use or on sale on or before 2003.

- Products, components, systems, and methods invented, designed, developed, reduced to practice, and/or in public use or on sale related to Qualcomm Binary Runtime Environment for Wireless Platform (“BREW”), as exemplified in claim charts in Exhibit D06. As part of these Invalidity Contentions, Bank of America has produced documents relating to the Qualcomm BREW. Based on information available to Bank of America, Bank of America believes that the Qualcomm BREW was conceived and/or reduced to practice by engineers at Qualcomm Incorporated at least before 2004, without being abandoned, suppressed, or concealed, and was in public use or on sale on or before 2004.
- Products, components, systems, and methods invented, designed, developed, reduced to practice, and/or in public use or on sale related to Ericsson’s Global Application Test Environment II / Mobile Application Test Environment (“GATE II / MATE”), as exemplified in claim charts in Exhibit D07. As part of these Invalidity Contentions, Bank of America has produced documents relating to the GATE II / MATE. Based on information available to Bank of America, Bank of America believes that the GATE II / MATE was conceived and/or reduced to practice by engineers at Telefonaktiebolaget LM Ericsson at least before 2002, without being abandoned, suppressed, or concealed, and was in public use or on sale on or before 2002.
- Products, components, systems, and methods invented, designed, developed, reduced to practice, and/or in public use or on sale related to J2ME, as exemplified in claim charts in Exhibit D08. As part of these Invalidity Contentions, Bank of America has produced documents relating to the J2ME. Based on information available to Bank of America, Bank of America believes that the J2ME was conceived and/or reduced to practice by engineers at Sun Microsystems, Inc. at least before 2004, without being abandoned, suppressed, or concealed, and was in public use or on sale on or before 2004.
- Products, components, systems, and methods invented, designed, developed, reduced to practice, and/or in public use or on sale related to Macromedia Flash Lite, as exemplified in claim charts in Exhibit D11. As part of these Invalidity Contentions, Bank of America has produced documents relating to the Macromedia Flash Lite. Based on information available to Bank of America, Bank of America believes that the Macromedia Flash Lite was conceived and/or reduced to practice by engineers at Macromedia Inc., later acquired by Adobe, at least before 2004, without being abandoned, suppressed, or concealed, and was in public use or on sale on or before 2004.
- Products, components, systems, and methods invented, designed, developed, reduced to practice, and/or in public use or on sale related to Palm OS Emulator, as

exemplified in claim charts in Exhibit D12. As part of these Invalidity Contentions, Bank of America has produced documents relating to the Palm OS Emulator. Based on information available to Bank of America, Bank of America believes that the Palm OS Emulator was conceived and/or reduced to practice by engineers at Palm Inc. at least before 2004, without being abandoned, suppressed, or concealed, and was in public use or on sale on or before 2004.

- Products, components, systems, and methods invented, designed, developed, reduced to practice, and/or in public use or on sale related to Pocket PC Emulator, as exemplified in claim charts in Exhibit D13. As part of these Invalidity Contentions, Bank of America has produced documents relating to the Pocket PC Emulator. Based on information available to Bank of America, Bank of America believes that the Pocket PC Emulator was conceived and/or reduced to practice by engineers at Microsoft Corporation at least before 2005, without being abandoned, suppressed, or concealed, and was in public use or on sale on or before 2005.
- Products, components, systems, and methods invented, designed, developed, reduced to practice, and/or in public use or on sale related to the Shunra system, as exemplified in claim charts in Exhibit D14. As part of these Invalidity Contentions, Bank of America has produced documents relating to the Shunra system. Based on information available to Bank of America, Bank of America believes that the Shunra system was conceived and/or reduced to practice by engineers at Shunra Software Ltd. at least before 2004, without being abandoned, suppressed, or concealed, and was in public use or on sale on or before 2004.

Bank of America's investigation into prior art systems remains ongoing and Bank of America reserves the right to identify and rely on systems that represent different versions or are otherwise related variations of the systems identified above. Bank of America further reserves the right to revise, amend, update, and/or supplement the information provided in these Invalidity Contention (including the attached claim charts) based on additional information and evidence obtained through discovery. Bank of America also reserves the right to rely on any system, product, or public knowledge or use that embodies or otherwise incorporates any of the prior art patents and publications listed above. In addition to the prior art products, components, systems, and methods described above, Bank of America also reserves the right to rely on documents and publications relating to the prior art listed above as prior art publications.

2. Anticipation and Obviousness

Bank of America contends that each item of prior art in Exhibits D1 to D15 anticipates the asserted claims of the '811 Patent. In the alternative, each item of prior art in Exhibits D1 to D15, when combined with the knowledge of a POSA and/or the applicant admitted prior art, renders obvious the asserted claims of the '811 Patent.

To the extent any limitation is not explicitly or inherently disclosed by an item of prior art listed in Exhibits D1 to D15, the claimed subject matter as a whole would have been obvious to one skilled in the art at the time of the alleged invention, in view of the state of the art and knowledge of those skilled in the art. The item of prior art on its own as read by one of skill in the art would, therefore, render the relevant claims invalid for obviousness under 35 U.S.C. § 103(a). Further, the asserted claims of the '811 Patent are obvious in view of at least a combination of any of the above cited references with at least one of the references in Appendix 1, 2, 3, 4, and/or 5.

The motivations to combine the references listed above are provided below in Section III.G.

3. Invalidity Under 35 U.S.C. § 112

The identified grounds noted below both individually and collectively render the Asserted Claims of the '811 patent invalid for failing to satisfy the indefiniteness, written description, and/or enablement requirements under the statutory requirements of § 112, ¶¶ 1-2. To the extent a claim element is contained within an element identified below or encompasses an element identified below, that claim element also renders the claim invalid under § 112.

- “mobile device” (claims 1–2, 4, 9, 22, and 24)
- “graphical images” (claims 1, 9, 22)
- “functions of the application responsible” (claims 1, 9, 22)

- “one or more characteristics indicative of a corresponding mobile device” (claim 1)
- “one or more characteristics indicative of a network on which the mobile device corresponding to the selected mobile device model can operate” (claim 1)
- “display simultaneously two or more graphical images of the application's resource utilization, wherein each graphical image relates to a different resource” (claim 1)
- “correspond the utilization of a specific displayed resource at a given time with one or more functions of the application responsible for that utilization.” (claim 1)
- “wherein the instructions initiate transmission of the application that is being developed to one or more physical versions of a mobile device corresponding to the selected mobile device model.” (claim 2)
- “wherein the monitored resources include processor usage, RAM usage and network usage” (claim 5)
- “one or more network events that occur when interacting with a wireless network” (claim 8)
- “one or more characteristics indicative of the targeted mobile device” (claim 9)
- “display simultaneously two or more graphical images of the application's resource utilization as it is running, wherein each graphical image relates to a different resource and is synched in time as the application is running;” (claim 9)
- “identify one or more functions of the application responsible for utilization of a specific displayed resource at a given time.” (claim 9)
- “one or more characteristics indicative of the mobile device” (claim 22)

- “correspond the utilization of a specific displayed resource at a given time with one or more functions of the application responsible for that utilization;” (claim 22)
- “initiate transmission of the application that is being developed to one or more physical versions of the mobile device.” (claim 22)
- “one or more characteristics, including bandwidth, indicative of a network on which the mobile device can operate” (claim 24)

F. ’579 patent

Bank of America identifies the following prior art now known to Bank of America to anticipate and/or render obvious one or more claims of the ’579 patent under at least 35 U.S.C. §§ 102(a), (b), (e), (g), and/or 103.

1. Prior Art

Bank of America identifies the following prior art now known to Bank of America to anticipate and/or render obvious one or more claims of the ’579 patent under at least 35 U.S.C. §§ 102(a), (b), (e), (g), and/or 103.

a. Prior Art Patents and Publications

The following patents and publications are prior art for the Asserted Claims of the ’579 patent under at least 35 U.S.C. §§ 102(a), (b), (e), and/or (g), either expressly or inherently as understood by a POSA, or based on Wapp’s apparent interpretation of the claims. Where an identified patent or publication describes a product, Bank of America intends to rely on the product described in such patent or publication as well as the patents and/or publication themselves.

- “The Mobiware Toolkit: Programmable Support for Adaptive Mobile Networking” by Oguz Angin et al. (“Angin”), published in August 1998, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. E01.

- “UBIWISE, A Simulator for Ubiquitous Computing Systems Design” by Barton et al. (“Barton”), published on April 29, 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. E02.
- U.S. Patent Application Publication No. US 2003/0156549 A1 to Binder et al. (“Binder”), filed on January 9, 2003, published on August 21, 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a), (b), and (e). *See* Ex. E03.
- BlackBerry Simulator Version 3.6 User Guide (DEF000333) (“Simulator User Guide”), published on April 10, 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. E04.
- BlackBerry Java Development Environment version 3.6 Developer Guide (DEF000084) (“Dev. Environment Dev. Guide”), published on March 21, 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. E04.
- U.S. Patent Application Publication No. US 2006/0282247 A1 to Brennan et al. (“Brennan”), filed on May 25, 2005, published on December 14, 2006, and qualifies as prior art at least under 35 U.S.C. § 102(e). *See* Ex. E05.
- U.S. Patent No. 7,877,247 to Nahata et al. (“Nahata”), filed on January 25, 2011, published on June 9, 2005, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (e). *See* Ex. E06.
- BREW 1.0 API – API Reference, https://developer.brewmp.com/reference/api-all/brew_mp_1.0.2. *See* Ex. E06.
- “Software Development for the Qualcomm BREW Platform” by Ray Rischpater (“Qualcomm Brew”), published in 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. E06.
- *Mobile Internet—An industry-wide paradigm shift?* (DEF004377) (“Andersson 1999”), published in 1999, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. E07.
- *An Experience in Evaluating Publish/Subscribe Services in a Wireless Network* (DEF007158) (“Caporuscio 2002”), published July 24–26, 2002, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. E07.
- *GPRS and 3G Wireless Applications* (DEF004329) (“Andersson 2001”), published in 2001, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. E07.
- GATE II / MATE Overview (DEF004385), on information and belief published prior to June 10, 2005, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. E07.
- MATE User Manual (DEF004419), published in 2001, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. E07.
- “J2ME in a Nutshell,” published in March 2002, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. E08.
- “J2ME Game Programming,” published in 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. E08.
- J2ME User Guide (v2.1), published in December 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. E08.
- J2ME User Guide (v.2.2), published in October 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. E08.

- U.S. Patent Application Publication No. 2004/0040010 to Kounik et al. (“Kounik”), filed on April 22, 2003, published on February 26, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a), (b), and (e). *See* Ex. E09.
- US Patent No. 2006/0277231 A1 to Kral et al. (“Kral”), filed on July 29, 2005, published on December 8, 2006, and qualifies as prior art at least under 35 U.S.C. § 102(e). *See* Ex. E10.
- Macromedia Delivers Flash Lite 1.1 (“Macromedia Press Release”), published June 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. E11.
- Macromedia - Flash 8 – Developing Flash Lite 2.x Applications (“Manual for Developing Flash Lite 2.x Applications”), published in January 2006, and qualifies as prior art at least under 35 U.S.C. § 102(a). *See* Ex. E11.
- “Palm OS Emulator,” published on April 1, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. E12.
- Palm OS Programmer’s Companion (Preliminary), published in 1999, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. E12.
- Palm OS Programming Bible by Lonnon R. Foster (“Foster”), published in 2000, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. E12.
- Palm OS Web Application Developer’s Guide by Ben Combee et al. (“Combee”), published in 2001, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. E12.
- Palm OS 5 ARM Programming – Palm OS 5 SDK (68K) R3 by Brian Maas et al. (“Maas”), published on July 30, 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. E12.
- Palm OS Programming – The Developer’s Guide by Neil Rhodes et al. (“Rhodes”), published in January 2002, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. E12.
- “A Trace-Driven Simulator for Palm OS Devices” by Hyrum D. Carroll (“Carroll”), published in September 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. E12.
- “Energy Estimation Tools for the Palm,” MSWiM, 2000, pp. 96–103 by Cignetti et al. (“Cignetti”), published on August 11, 2000, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. E12.
- Using Palm OS Emulator by Brian Maas (“Maas2”), published in March 2002, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. E12.
- Virtual Phone User’s Guide – Palm OS 5 SDK (68K) R3 by Brian Maas et al. (“Maas3”), published on July 30, 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. E12.
- Pocket PC 2002 SDK Emulator Images (“Pocket PC 2002”), published on February 13, 2002, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. E13.
- Pocket PC 2003 Second Edition Emulator Images (“Pocket PC 2003”), published on March 24, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. E13.

- TechRepublic, *Introduction to Pocket PC Development*, published on October 26, 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. E13.
- Girish Nurani Sankaranarayanan, CodeProject, *Get up and running with Windows CE* (Get Up and Running with Windows CE), published on July 22, 2002, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. E13.
- Microchip Technology Inc., *Programming the Pocket PC OS for Embedded IR Applications* (2004) (“Programming the Pocket PC”), published in 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. E13.
- Paul Yao & David Durant, .NET Compact Framework Programming with C# (“.NET Compact Framework Programming”), published on May 24, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. E13.
- AT&T Wireless, *devCentral White Paper: Developing Applications for Pocket PC and GPRS/EDGE* (“Developing Applications for Pocket PC”), published on October 15, 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. E13.
- Dennis Drogseth, Delivering WAN-ready applications with Shunra (“Drogseth”), published on October 11, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. E14.
- Business Wire, Network Computing Magazine Tests with Shunra Software’s Pre-emptive Infrastructure Performance Management Solutions (“Network Computing Magazine”), published on April 28, 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. E14.
- Shunra\Storm Solution Suite: The Complete Enterprise Performance Lab (“Shunra\Storm Solution Suite”), published on February 20, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. E14.
- How Shunra\Storm Works (“How Shunra\Storm Works”), published on April 28, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. E14.
- Testing Report: SHUNRA\STORM STX-100 (“Testing Report”), published in October 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. E14.
- SHUNRA\STORM – 3.0 Solution Suite – Bringing the Complete Enterprise Environment into Your Lab (“3.0 Solution Suite”), published in 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. E14.
- The Shunra Virtual Enterprise Architecture and Specifications (“Architecture and Specifications”), published on April 3, 2005, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. E14.
- Network World, Shunra Updates Network Simulation, Profiling Tool (“Shunra Updates”), published on February 6, 2006, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. E14.
- Shunra Virtual Enterprise 4.0 – Deliver It With Confidence (“Shunra Virtual Enterprise”), published on March 16, 2006, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. E14.

- InfoWorld, Shunra Releases an Enterprise Testing Storm (“InfoWorld”), published on March 26, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. E14.
- ADT Magazine, Product Briefs (“Product Briefs”), published on June 1, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. E14.
- Hotwire.com Selects Shunra Software to Proactively Ensure the Performance of its eCommerce Applications over the Internet (“Hotwire Selects Shunra”), published on November 8, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. E14.
- U.S. Patent No. 7,647,399 to Ofel (“Ofel”), filed on December 6, 2005, published on June 7, 2007, and qualifies as prior art at least under 35 U.S.C. § 102(a), (b), and (e). *See* Ex. E14.
- U.S. Patent No. 7,673,042 to Lesser (“Lesser”), filed on December 6, 2005, published on June 7, 2007, and qualifies as prior art at least under 35 U.S.C. § 102(a), (b), and (e). *See* Ex. E14.
- U.S. Patent No. 7,877,230 to Ofel, Jacobson, and Horowitz (“Ofel/Jacobson”). *See* Ex. E14.
- WIPO International Application Publication No. WO 99/63439 (“Daon”), published on June 4, 1998, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. E14.
- The Shunra Virtual Network (Desktop Edition) (“Virtual Network (Desktop Edition)”), published on March 31, 2005, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. E14.
- Shunra Stratus 2.0 Shortens Development Cycle (“Shunra Stratus 2.0”), published on May 7, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. E14.
- Shunra\Stratus 2.0 for Development Testing of Distributed Applications (“Shunra\Stratus 2.0 for Development Testing”), published on June 9, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. E14.
- Shunra\Stratus: Performance Debugger for Distributed Applications (“Shunra\Stratus: Performance Debugger”), published on April 5, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. E14.
- Shunra\Cloud: Network Emulator for the Small Business Performance Lab (“Shunra\Cloud: Network Emulator”), published on June 3, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. E14.
- Shunra\Cloud – Emulation Module (“Shunra\Cloud – Emulation Module”), published on August 15, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. E14.
- Mercury LoadRunner (“Mercury LoadRunner”), published on May 29, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. E14.
- Mercury LoadRunner – How it Works (“Mercury LoadRunner - How it Works”), published on June 15, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. E14.

- Mercury LoadRunner – Features and Benefits (“Mercury LoadRunner - Features and Benefits”), published on May 29, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. E14.
- The Shunra Virtual Network: Assess IT Services Over a Network Link Small Business Edition (Shunra\Cloud) (“Virtual Network”), published on March 7, 2005, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b). *See* Ex. E14.
- U.S. Patent Application Publication No. 2005/0047556 to Somerville et al. (“Somerville”), filed on August 25, 2003, published on March 3, 2005, and qualifies as prior art at least under 35 U.S.C. § 102(a), (b), and (e). *See* Ex. E15.
- U.S. Patent Application Publication No. US 2006/0009159 to Leung (“Leung”), filed on July 9, 2004, published on January 12, 2006, and qualifies as prior art at least under 35 U.S.C. § 102 (a), (b), and (e).
- U.S. Patent Application Publication No. 2005/0090243 to El Hussein et al. (“El Hussein”), filed on October 23, 2003, published on April 28, 2005, and qualifies as prior art at least under 35 U.S.C. § 102(a), (b), and (e).
- U.S. Patent Application Publication No. 2006/0140125 to Ottinger et al. (“Ottinger”), filed on December 23, 2004, published on June 29, 2006, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (e).
- UK Patent No. GB 2,398,456 A to Windred (“Windred”), published on August 18, 2004, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b).
- U.S. Patent Application Publication No. 2005/0090239 to Lee et al. (“Lee”), filed on October 22, 2003, published on April 28, 2005, and qualifies as prior art at least under 35 U.S.C. § 102(a), (b), and (e).
- U.S. Patent Application Publication No. 2003/0045298 to Linton et al. (“Linton”), filed on March 30, 2001, published on March 6, 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a), (b), and (e).
- “WISE – A Simulator Toolkit for Ubiquitous Computing Scenarios” by V. Vijayraghavan et al. (“Vijayraghavan”), published on October 22, 2002, and qualifies as prior art at least under 35 U.S.C. § 102(a) and (b).
- U.S. Patent No. 7,155,381 to Ryzl (“Ryzl”), filed on March 12, 2001, published on November 14, 2002, and qualifies as prior art at least under 35 U.S.C. § 102(a), (b), and (e).
- U.S. Patent No. 6,898,602 to Sayag (“Sayag”), filed on April 22, 2002, published on October 23, 2003, and qualifies as prior art at least under 35 U.S.C. § 102(a), (b), and (e).
- WIPO Patent Application Pub. No. WO 2004/031951 A2 (“Poortman”) was published on April 15, 2004. It qualifies as prior art at least under 35 U.S.C. § 102 (a) and (b).
- U.S. Patent No. 6,311,324 (“Smith”) issued on October 30, 2001 and was filed on June 7, 1995. It qualifies as prior art at least under 35 U.S.C. § 102 (a), (b), and (e).

Bank of America’s investigation into prior art patent and publication references remains ongoing and Bank of America reserves the right to identify and rely on additional patent or

publication references that describe or are otherwise related to the prior art systems identified below based on information obtained through discovery.

b. Prior Art Systems

The following systems are anticipatory prior art for the Asserted Claims of the '579 patent under at least 35 U.S.C. §§ 102(a), (b) and/or (g):

- Products, components, systems, and methods invented, designed, developed, reduced to practice, and/or in public use or on sale related to BlackBerry Development Environment, as exemplified in claim charts in Exhibit E04. As part of these Invalidity Contentions, Bank of America has produced documents relating to the BlackBerry Development Environment. Based on information available to Bank of America, Bank of America believes that the BlackBerry Development Environment was conceived and/or reduced to practice by engineers at BlackBerry Limited at least before 2003, without being abandoned, suppressed, or concealed, and was in public use or on sale on or before 2003.
- Products, components, systems, and methods invented, designed, developed, reduced to practice, and/or in public use or on sale related to Qualcomm Binary Runtime Environment for Wireless Platform ("BREW"), as exemplified in claim charts in Exhibit E06. As part of these Invalidity Contentions, Bank of America has produced documents relating to the Qualcomm BREW. Based on information available to Bank of America, Bank of America believes that the Qualcomm BREW was conceived and/or reduced to practice by engineers at Qualcomm Incorporated at least before 2004, without being abandoned, suppressed, or concealed, and was in public use or on sale on or before 2004.
- Products, components, systems, and methods invented, designed, developed, reduced to practice, and/or in public use or on sale related to Ericsson's Global Application Test Environment II / Mobile Application Test Environment ("GATE II / MATE"), as exemplified in claim charts in Exhibit E07. As part of these Invalidity Contentions, Bank of America has produced documents relating to the GATE II / MATE. Based on information available to Bank of America, Bank of America believes that the GATE II / MATE was conceived and/or reduced to practice by engineers at Telefonaktiebolaget LM Ericsson at least before 2002, without being abandoned, suppressed, or concealed, and was in public use or on sale on or before 2002.
- Products, components, systems, and methods invented, designed, developed, reduced to practice, and/or in public use or on sale related to J2ME, as exemplified in claim charts in Exhibit E08. As part of these Invalidity Contentions, Bank of America has produced documents relating to the J2ME. Based on information available to Bank of America, Bank of America believes that the J2ME was conceived and/or reduced to practice by engineers at Sun Microsystems, Inc. at

least before 2004, without being abandoned, suppressed, or concealed, and was in public use or on sale on or before 2004.

- Products, components, systems, and methods invented, designed, developed, reduced to practice, and/or in public use or on sale related to Macromedia Flash Lite, as exemplified in claim charts in Exhibit E11. As part of these Invalidity Contentions, Bank of America has produced documents relating to the Macromedia Flash Lite. Based on information available to Bank of America, Bank of America believes that the Macromedia Flash Lite was conceived and/or reduced to practice by engineers at Macromedia Inc., later acquired by Adobe, at least before 2004, without being abandoned, suppressed, or concealed, and was in public use or on sale on or before 2004.
- Products, components, systems, and methods invented, designed, developed, reduced to practice, and/or in public use or on sale related to Palm OS Emulator, as exemplified in claim charts in Exhibit E12. As part of these Invalidity Contentions, Bank of America has produced documents relating to the Palm OS Emulator. Based on information available to Bank of America, Bank of America believes that the Palm OS Emulator was conceived and/or reduced to practice by engineers at Palm Inc. at least before 2004, without being abandoned, suppressed, or concealed, and was in public use or on sale on or before 2004.
- Products, components, systems, and methods invented, designed, developed, reduced to practice, and/or in public use or on sale related to Pocket PC Emulator, as exemplified in claim charts in Exhibit E13. As part of these Invalidity Contentions, Bank of America has produced documents relating to the Pocket PC Emulator. Based on information available to Bank of America, Bank of America believes that the Pocket PC Emulator was conceived and/or reduced to practice by engineers at Microsoft Corporation at least before 2005, without being abandoned, suppressed, or concealed, and was in public use or on sale on or before 2005.
- Products, components, systems, and methods invented, designed, developed, reduced to practice, and/or in public use or on sale related to the Shunra system, as exemplified in claim charts in Exhibit E14. As part of these Invalidity Contentions, Bank of America has produced documents relating to the Shunra system. Based on information available to Bank of America, Bank of America believes that the Shunra system was conceived and/or reduced to practice by engineers at Shunra Software Ltd. at least before 2004, without being abandoned, suppressed, or concealed, and was in public use or on sale on or before 2004.

Bank of America's investigation into prior art systems remains ongoing and Bank of America reserves the right to identify and rely on systems that represent different versions or are otherwise related variations of the systems identified above. Bank of America further reserves the right to revise, amend, update, and/or supplement the information provided in these Invalidity

Contention (including the attached claim charts) based on additional information and evidence obtained through discovery. Bank of America also reserves the right to rely on any system, product, or public knowledge or use that embodies or otherwise incorporates any of the prior art patents and publications listed above. In addition to the prior art products, components, systems, and methods described above, Bank of America also reserves the right to rely on documents and publications relating to the prior art listed above as prior art publications.

2. Anticipation and Obviousness

Bank of America contends that each item of prior art in Exhibits E1 to E15 anticipates the asserted claims of the '579 Patent. In the alternative, each item of prior art in Exhibits E1 to E15, when combined with the knowledge of a POSA and/or the applicant admitted prior art, renders obvious the asserted claims of the '579 Patent.

To the extent any limitation is not explicitly or inherently disclosed by an item of prior art listed in Exhibits E1 to E15, the claimed subject matter as a whole would have been obvious to one skilled in the art at the time of the alleged invention, in view of the state of the art and knowledge of those skilled in the art. The item of prior art on its own as read by one of skill in the art would, therefore, render the relevant claims invalid for obviousness under 35 U.S.C. § 103(a). Further, the asserted claims of the '579 Patent are obvious in view of at least a combination of any of the above cited references with at least one of the references in Appendix 1, 2, 3, 4, and/or 5.

The motivations to combine the references listed above are provided below in Section III.G.

3. Invalidity Under 35 U.S.C. § 112

The identified grounds noted below both individually and collectively render the Asserted Claims of the '579 patent invalid for failing to satisfy the indefiniteness, written description, and/or enablement requirements under the statutory requirements of § 112, ¶¶ 1-2. To the extent a claim

element is contained within an element identified below or encompasses an element identified below, that claim element also renders the claim invalid under § 112.

- “mobile device” (claims 1, 5, 7, and 13–16)
- “functions” (claims 2, 15)
- “areas of code” (claims 2, 15)
- “wherein the software instructions include identifying one or more areas of code, or functions, or both of the application responsible for utilization of a specific displayed resource at a given time.” (claim 2)
- “wherein the monitored resources include processor usage and RAM usage.” (claim 4)
- “wherein the instructions initiate transmission of the application that is being developed to one or more physical versions of a mobile device corresponding to the selected mobile device type” (claim 5)
- “wherein the instructions display simultaneously two or more representations of the monitored resource” (claim 6)
- “one or more characteristics, including bandwidth, indicative of a network on which the selected mobile device type can operate” (claim 7)
- “one or more network events that occur when interacting with a wireless network” (claims 11 & 19)
- “wherein the one or more characteristics are available for testing the application within one or more mobile devices connected to at least one of the internet and a wireless network” (claim 13)

- “wherein the one or more mobile devices connected to the at least one of the internet and a wireless network enable a user to interact with and test the application on one or more mobile devices” (claim 14)
- “correspond the utilization of a specific displayed resource at a given time with one or more functions, or code, or both of the application responsible for that utilization” (claim 15)
- “initiate transmission of the application on a simulation of the mobile device, or to the physical mobile device, or both” (claim 15)
- “wherein the instructions initiate loading of at least one of the one or more characteristics from at least one of a remote server and a computer-readable media, wherein the physical mobile device is connected to at least one of the internet, a wireless network and the remote server, to enable a user to interact with and test the application” (claim 16)
- “identifying one or more areas of code, or functions, or both of the application responsible for utilization of a specific displayed resource at a given time” (claim 17)
- “the instructions to display the representations are stored in at least one of a file, a database, and on computer-readable media that is accessible via the internet” (claim 28)

G. Reasons to Combine Prior Art References

For at least the reasons described above and below in the examples provided, as well as in the attached claim charts, it would have been obvious to one of ordinary skill in the art to combine any of the above cited references with at least one of the references in Appendix 1, 2, 3, 4, and/or

5. As such, Bank of America's identification of exemplary combinations is without limitation to Bank of America identifying other invalidating combinations as appropriate.

Bank of America believes that no showing of a specific motivation to combine prior art is required to combine the references disclosed herein and in the attached charts. As reflected in the attached exhibits, and in the references themselves, there was a reason to make each combination—each combination of art would have produced no unexpected results, and each combination at most would simply represent a known alternative to one of ordinary skill in the art. *See KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398, 414-18 (2007) (rejecting the Federal Circuit's "rigid" application of the teaching, suggestion, or motivation-to-combine test, instead espousing an "expansive and flexible" approach). As reflected in the attached exhibits, in the references themselves, and the discussion herein, the asserted claims of Wapp's patents combine familiar elements according to known methods, yielding predictable results. Moreover, one of ordinary skill in the art would be prompted to modify each of these references based on design incentives or other market forces. This is true for references in the same field of endeavor as well as for references in a different field of endeavor, as one of skill would understand that techniques used to improve devices and/or software instructions in a related or analogous field could improve similar devices and/or software instructions in the same way. No specific reference explicitly spelling out all aspects of a proposed combination is required to show obviousness; indeed, the Supreme Court has explained that a person of ordinary skill is "a person of creativity, not an automaton," and "in many cases a person of ordinary skill in the art will be able to fit the teachings of multiple patents together like pieces of a puzzle." *Id.* at 420-21. As reflected in the attached exhibits, the discussion herein, and in the references themselves, the elements of Wapp's Asserted Claims are all disclosed in the art before the earliest possible priority dates of the Asserted Patents, and one of skill would readily fit their

teachings together.

Nevertheless, in addition to the information contained elsewhere in these contentions, including the exhibits, Bank of America hereby identifies below additional motivations and reasons to combine the cited art. To determine whether there is a reason to combine the known elements in the manner claimed by a patent, a court can “look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art.” *Id.* at 418. For example, obviousness can be demonstrated by showing “there existed at the time of invention a known problem for which there was an obvious solution encompassed by the patent’s claims.” *Id.* at 420. “[A]ny need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed.” *Id.* Common sense also teaches that “familiar items may have obvious uses beyond their primary purposes, and in many cases a person of ordinary skill will be able to fit the teachings of multiple patents together like pieces of a puzzle.” *Id.*

Applying these principles, it would have been obvious to a person of ordinary skill in the art at the time the application that issued as each of the Asserted Patents was filed to combine, modify, or use the teachings of the prior art to make the purported inventions of those patents, including by making each of the combinations identified above. The motivation to combine the teachings of the prior art references disclosed herein can be found in each of (1) the references themselves, (2) the nature of the problem being solved, (3) the express, implied and inherent teachings of the prior art, (4) the knowledge of persons of ordinary skill in the art, (5) the fact that the prior art is generally directed towards the subject matter of each respective Asserted Patent, and (6) the predictable results obtained in combining the elements of the prior art.

The Asserted Patents are obvious in light of the state of the art and/or knowledge of a person of ordinary skill in the art, as demonstrated by prior art and references in Exhibits A1 to E15 and Appendices 1-5.

To the extent the primary references in Exhibits A1 to E15 are found to not anticipate any one of the asserted claims, they render the claims obvious, whether standing alone, or when combined with knowledge of the ordinary artisan, the nature of the problem to be solved, and/or the references in Exhibits A1 to E15 and Appendices 1-5.

To the extent the references discussed herein or in Exhibits A1 to E15 are found to lack particular elements of the asserted claims, those elements would have represented mere obvious modifications of the references themselves. Each asserted claim would have been obvious in view of the primary references alone, or in combination with other primary references and/or the references identified in Appendices 1-5. All of the references identified in Exhibits A1 to E15 and Appendices 1-5 are in the same field of endeavor. Moreover, the combination of the references in Exhibits A1 to E15 and/or Appendices 1-5 would simply be a matter of combining known elements in a known manner to achieve predictable results. To the extent that any limitation is determined not to be disclosed in any of these references, it would have been obvious to combine any of these references to provide the allegedly missing limitation.

Furthermore, the references identified herein with respect to the Asserted Patents address the same problem of app development and testing. A person of ordinary skill in the art would have looked to other devices and/or software in the same field, such as the prior art devices and other references, because all of these devices and references share many of the same or substantially similar components. The use of such components is expressly described in Exhibits A1 to E15 and Appendices 1-5. A person of ordinary skill in the art would therefore have been motivated to

combine these components, knowing that these well-known elements would achieve their purposes in combination, without any difficulty and without any unexpected results.

One of ordinary skill also would have been motivated to combine any of the above references together to yield predictable results, as combining the references would simply entail combining known elements by known methods in the art. In addition, any such combination would involve the simple substitution of one known, equivalent element for another. Such combinations would have been obvious to try because there were only a finite number of predictable solutions. Any such combination would yield predictable results using known techniques and would involve the simple substitution of one known, equivalent element for another. For example, the prior art contains numerous disclosures of systems for testing and emulating apps, devices, and/or networks, and one of ordinary skill in the art would at the time of the alleged invention of the Asserted Patents would have known that such systems could be used in combination with predictable results.

Discussed below are groups of exemplary prior art references where it would be obvious to combine members from the groups in ways similar to the other obviousness combinations provided. These limitations comprise elements that were well known in the art and would have been obvious to one of skill in the art. Combining the limitations disclosed by these groups with prior art products yields predictable results. In addition to the specific combinations of prior art and the specific combinations of groups of prior art disclosed herein, Bank of America reserves the right to rely on any combination of any prior art references disclosed herein. These obviousness combinations reflect Bank of America's present understanding of the potential scope of the claims that Wapp appears to be advocating based on its Infringement Contentions and should not be seen as Bank of America's acquiescence to Wapp's interpretation of the patent claims.

For example, certain Asserted Claims recite claim limitations related to network simulation (under the apparent interpretation set forth in Wapp's Infringement Contentions).² By the earliest possible priority date of the Asserted Claims, techniques for network simulation were well known. *See, e.g.*, Appendix 1. A POSA would have recognized the benefits of including network simulation capability in the claimed system, including, for example, allowing fast and accurate testing of applications and/or devices that interact with a network. Thus, to the extent any reference does not explicitly disclose these limitations, they would have been obvious to a POSA in view of the level of skill in the art, the admitted prior art, and/or one of the references charted in Appendix 1 because this represented the conventional approach for network simulation with known benefits. A POSA would have been motivated to incorporate this feature to obtain the predictable result with a reasonable expectation of success.

For example, certain Asserted Claims recite claim limitations related to device simulation (under the apparent interpretation set forth in Wapp's Infringement Contentions).³ By the earliest possible priority date of the Asserted Claims, techniques for device simulation were well known. *See, e.g.*, Appendix 2. The Asserted Patents admit that device simulation was well known, and the specification references device simulation technology. *See, e.g.*, '864 Patent at 1:51–57. A POSA would have recognized the benefits of including device simulation capability in the claimed system, including, for example, allowing fast and accurate testing of applications on multiple simulated devices with different characteristics to ensure an application will work on a variety of devices. Thus, to the extent any reference does not explicitly disclose these limitations, they would

² Based on Bank of America's current understanding of Wapp's Infringement Contentions, the claim limitations that apparently relate to network simulation are identified in Appendix 1.

³ Based on Bank of America's current understanding of Wapp's Infringement Contentions, the claim limitations that apparently relate to device simulation are identified in Appendix 2.

have been obvious to a POSA in view of the level of skill in the art, the admitted prior art, and/or one of the references charted in Appendix 2 because this represented the conventional approach for device simulation with known benefits. A POSA would have been motivated to incorporate this feature to obtain the predictable result with a reasonable expectation of success.

For example, certain Asserted Claims recite claim limitations related to resource monitoring (under the apparent interpretation set forth in Wapp's Infringement Contentions).⁴ By the earliest possible priority date of the Asserted Claims, techniques for resource monitoring were well known. *See, e.g.*, Appendix 3. The Asserted Patents admit that resource monitoring was well known, and the specification references resource monitoring technology. *See, e.g.*, '579 patent at 3:61-66 ("When developing a software program, a software developer often utilizes a software profiler to generate a report.... The report may be used to find and optimize resource intensive areas of the software program."). A POSA would have recognized the benefits of including resource monitoring capability in the claimed system or computer-readable medium, including, for example, identifying and optimizing resource intensive areas of an application, acknowledged as well-known in the art in the Asserted Patents. *Id.* Moreover, for both software and hardware development, a POSA would have recognized the benefits of resource monitoring, including enhancing efficiency in software and hardware development, identifying areas of improvement in both software and hardware advancement, and preempting application failure before releases. Thus, to the extent any reference does not explicitly disclose these limitations, they would have been obvious to a POSA in view of the level of skill in the art, the admitted prior art, and/or one of the references charted in Appendix 3 because this represented the conventional approach for

⁴ Based on Bank of America's current understanding of Wapp's Infringement Contentions, the claim limitations that apparently relate to device simulation are identified in Appendix 3.

resource monitoring with known benefits. A POSA would have been motivated to incorporate this feature to obtain the predictable result with a reasonable expectation of success.

For example, certain Asserted Claims recite claim limitations related to basic simulation analytics (under the apparent interpretation set forth in Wapp's Infringement Contentions).⁵ By the earliest possible priority date of the Asserted Claims, techniques for basic simulation analytics were well known. *See, e.g.*, Appendix 4. The Asserted Patents admit that basic simulation analytics was well known, and the specification references basic simulation analytics technology. *See, e.g.*, '579 patent at 3:61-66 ("When developing a software program, a software developer often utilizes a software profiler to generate a report.... The report may be used to find and optimize resource intensive areas of the software program."). A POSA would have recognized the benefits of including basic simulation analytics capability in the claimed system or computer-readable medium, including, for example, identifying and optimizing resource intensive areas of an application, acknowledged as well-known in the art in the Asserted Patents. *Id.* Moreover, for both software and development, a POSA would have recognized the benefits of basic simulation analytics, including facilitating troubleshooting in application development, enhancing efficiency in programming and debugging, providing straightforward deliverables for performance testing, and preempting application failure before releases, and identifying areas of improvement for further software and hardware development. Thus, to the extent any reference does not explicitly disclose these limitations, they would have been obvious to a POSA in view of the level of skill in the art, the admitted prior art, and/or one of the references charted in Appendix 4 because this represented the conventional approach for basic simulation analytics with known benefits. A

⁵ Based on Bank of America's current understanding of Wapp's Infringement Contentions, the claim limitations that apparently relate to application transmission are identified in Appendix 4.

POSA would have been motivated to incorporate this feature to obtain the predictable result with a reasonable expectation of success.

For example, certain Asserted Claims recite claim limitations related to application transmission (under the apparent interpretation set forth in Wapp's Infringement Contentions).⁶ By the earliest possible priority date of the Asserted Claims, techniques for application transmission were well known. *See, e.g.*, Appendix 5. The Asserted Patents admit that application transmission was well known, and the specification references application transmission technology. *See, e.g.*, '678 Patent at 1:57–2:2. A POSA would have recognized the benefits of including application transmission capability in the claimed system, including, for example, that transmitting an application to a physical device or simulated device allows for testing the application to confirm it works as expected on the device. Thus, to the extent any reference does not explicitly disclose these limitations, they would have been obvious to a POSA in view of the level of skill in the art, the admitted prior art, and/or one of the references charted in Appendix 5 because this represented the conventional approach for application transmission with known benefits. A POSA would have been motivated to incorporate this feature to obtain the predictable result with a reasonable expectation of success.

IV. DOCUMENT PRODUCTION ACCOMPANYING INVALIDITY CONTENTIONS

Documents required to be produced under the Patent Scheduling Order and Patent Local Rule 3-4 have been or are being produced to Wapp under a separate letter or will be made available for inspection.

Bank of America reserves the right to produce and rely on additional documents relating

⁶ Based on Bank of America's current understanding of Wapp's Infringement Contentions, the claim limitations that apparently relate to application transmission are identified in Appendix 5.

to its products in view of, for example, additional information revealed during discovery regarding Wapp's allegations and/or amendments to Wapp's Infringement Contentions.

V. OTHER RESERVATIONS AND EXPLANATIONS

Nothing in these contentions constitutes an admission concerning the priority date, conception date, or date of reduction to practice of the Asserted Claims. If the Court finds that Wapp is entitled to a different priority date from the earlier possible priority date, or Wapp clarifies its position regarding the priority date, Bank of America reserves the right to serve additional or modified invalidity contentions.

For prior art patents and prior art publications identified in these Invalidity Contentions, Bank of America reserves the right to rely on the public use, offer for sale, sale, and/or actual products embodying the methods and systems described therein uncovered during discovery. Bank of America also reserves the right to rely on any related patents and patent applications, foreign patent counterparts and foreign patent applications of U.S. patents identified in these Invalidity Contentions, and U.S. counterparts of foreign patents and foreign patent applications identified in these Invalidity Contentions.

The Court has not yet construed any of the terms in the Asserted Patents in this case. Accordingly, Bank of America's Invalidity Contentions are based in part on Bank of America's present understanding of the Asserted Claims and Wapp's apparent interpretation of these claims as reflected in its Infringement Contentions. By including prior art that anticipates or renders obvious claims based on Wapp's apparent claim interpretations, Bank of America is not agreeing that Wapp's claim interpretations are correct.

The accompanying invalidity claim charts provide examples of prior art that discloses, either expressly or inherently, every limitation of certain claims and/or teachings, suggestions and motivations through which a POSA at the time of the alleged invention would have considered the

limitations obvious in view of the state of the art at the time, the differences between the claimed invention and the state of the art, and the foreseeability from a technical perspective and/or marketing and/or natural and expected evolution of the art. Where Bank of America cites to a particular figure in a reference, the citation should be understood to encompass the caption and description of the figure and any text relating to the figure. Conversely, where Bank of America cites to particular text referring to a figure, the citation should be understood to include the figure as well. As discovery progresses and the scope and focus of the liability issues become clearer, Bank of America may rely on uncited portions of the prior art.

Bank of America reserves the right to revise its ultimate contentions concerning the invalidity of asserted the Asserted Claims, which may change depending upon discovery taken in the case, the Court's construction of the Asserted Claims, any findings as to the priority date of the Asserted Claims, and/or positions that Wapp or expert witness(es) may take concerning claim construction, infringement, and/or invalidity issues.

Bank of America may rely on Wapp's or any inventor's admissions concerning the scope of prior art relevant to the Asserted Patents; the patent prosecution histories for the Asserted Patents; any deposition testimony of the named inventors on the Asserted Patents; and the papers filed and any evidence submitted by Wapp in connection with this litigation. For example, Bank of America reserves the right to assert that the Asserted Claims are invalid under 35 U.S.C. § 102(f) in the event that Bank of America obtains evidence that the named inventors did not invent (either alone or in conjunction with others) the subject matter claimed in the Asserted Patents. Should Bank of America obtain such evidence, Bank of America will provide the name(s) of the person(s) from whom and the circumstances under which the claimed invention or any part of it was derived.

Prior art not included in this disclosure, whether known or not known to Bank of America, may become relevant. In particular, Bank of America is currently unaware of the extent, if any, to which Wapp will contend that limitations of the Asserted Patents are not disclosed in the prior art identified by Bank of America. To the extent such an issue arises, Bank of America reserves the right to identify other references that would render obvious the allegedly missing limitation(s) of the disclosed device or method. Further, because discovery is ongoing and because Bank of America has not yet completed its search for or analysis of relevant prior art, Bank of America reserves the right to revise, amend, update, and/or supplement the information provided herein, including identifying, charting, and relying on additional references, should Bank of America's further search and analysis yield additional information or references, consistent with the Federal Rules of Civil Procedure.

Additionally, because third-party discovery is not yet complete, Bank of America reserves the right to present additional items of prior art under 35 U.S.C. §§ 102(a), (b), (e), and/or (g), and/or § 103, located during the course of such discovery or further investigation, and to assert invalidity under 35 U.S.C. §§ 102(c), (d), or (f), to the extent that such discovery or investigation yields information forming the basis for such invalidity. For example, Bank of America expects to issue subpoenas to, and receive information from, third parties believed to have knowledge, documentation, and/or corroborating evidence concerning some of the prior art listed below and/or additional prior art. These third parties include, without limitation, the authors, inventors, vendors, or assignees of the references listed in these disclosures.

Bank of America further reserves the right to modify or add contentions in the event that Wapp provides amended infringement contentions and to the extent the Court orders or allows Wapp to amend its infringement contentions.

Pursuant to the Patent Scheduling Order, and in light of Wapp's Infringement Contentions and accompanying claim charts, Bank of America lists in these Invalidity Contentions the prior art now known to it that it contend anticipates or renders obvious asserted the Asserted Claims. Although Bank of America has identified at least one disclosure of a limitation for each prior art reference, each and every disclosure of the same limitation in the same reference is not necessarily identified. In an effort to focus the issues, Bank of America's citations are only representative portions of an identified reference, even where a reference may contain additional support for a particular claim limitation. POSAs generally read an item of prior art as a whole and in the context of other publications and literature. Thus, to understand and interpret any specific statement or disclosure within a prior art reference, such persons would rely on other information within the reference, along with other publications and their general scientific knowledge. Bank of America may rely on uncited portions of the prior art references and on other publications and expert testimony to provide context, and as aids to understanding and interpreting the portions that are cited.

Bank of America incorporates in these Invalidity Contentions, in full, all prior art references cited in the Asserted Patents and their prosecution histories and any applicable post-grant proceedings, including *inter partes* reviews.

Subject to Bank of America's reservation of rights, Bank of America identifies each item of prior art that anticipates and/or renders obvious the Asserted Claims. The patents/applications, publications, and systems identified are also relevant to show the state of the art and reasons and motivations for making improvements, additions, and combinations.

Bank of America also contends that the Asserted Patents are invalid in view of public knowledge and uses and/or offers for sale or sales of products and services that are under 35 U.S.C.

§ 102(a) and/or 35 U.S.C. § 102(b) and/or prior inventions made in this country by other inventors who had not abandoned, suppressed, or concealed them under 35 U.S.C. § 102(g).

Bank of America also reserves the right to rely on any system, public knowledge or use embodying or otherwise incorporating any of the prior art disclosed herein alone or in combination. Bank of America further reserves the right to rely on any other documents or references describing any such system, knowledge or use.

Dated: February 10, 2021

Respectfully submitted,

/s/ Timothy S. Durst

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CERTIFICATE OF SERVICE

I hereby certify that all counsel of record who are deemed to have consented to electronic service are being served this tenth day of February 2022 with a copy of this document via electronic mail.

Dated: February 10, 2022

/s/ Timothy S. Durst

Timothy S. Durst